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ABSTRACT

In 1973 the Harvard School of Public Health contracted with the Bureau of Health Manpower Education to study, modify, and augment the school's educational program and related research and service activities in light of existing public health needs and those likely to arise in the next five to ten years. The model educational program developed as a result is a two-year master's-level program in Health Policy and Management (HPM). In this report an overview of the contract is provided and the HPM program is discussed. A case study approach is used to focus on the development of the program and on other new educational, service, and research activities in health services. Several complementary efforts in midcareer education, interdisciplinary research, and informed health policy decision-making are described, and future plans are discussed. (MSE)

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REVIEW, EVALUATION, AND MODIFICATION OF THE EDUCATIONAL PROGRAM OF THE HARVARD SCHOOL OF PUBLIC HEALTH

FINAL REPORT

Covers Period of Performance During
January 1, 1973 - March 31, 1978

CONTRACT NO. NO1-AH-34018

CONTRACTOR

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I. INTRODUCTION

On January 1, 1973, the Harvard School of Public Health contracted with the Bureau of Health Manpower Education[1] to study, modify, and augment the School's educational program and related research and service activities, in light of existing public health needs and those likely to arise in the next five to ten years. Our decision to undertake this task grew out of the confluence of several factors. First, the arrival of a new dean at the School of Public Health -- Dr. Howard H. Hiatt, who joined the School in July, 1972 -- made review and revision of the School's programs particularly timely. Second, we were struck by the "paradox of the magnitude and seriousness of the health problems that confront society, on the one hand, and the almost universal search for missions on the part of schools of public health, on the other."[2] The most obvious explanation for this paradox seemed to be that the health needs of society were changing rapidly, but the programs of schools of public health were not keeping pace. With the support of the contract, we hoped to arrive at some understanding of those needs and how they might evolve, and then modify our programs in response to them. We wanted to undertake experiments that might serve as a basis for revision of many of the School's educational programs. To this end, we sought to identify and enlist the major areas of relevant strengths within the School and integrate them with new approaches to important health problems. We also hoped that our experiences might serve as a kind of model or "test case" that would be useful to the many other schools of public health that seemed to be undergoing a similar period of uncertainty and self-examination.

As the principal method for our review of current and future manpower and research needs, we held a series of expert panels covering all major areas of public health. Following each meeting, we reviewed the panel's recommendations, came to a tentative decision as to those we thought worthy of implementation and had the resources to pursue, and began the process of planning and developing new programs. Although new activities got underway very quickly in some areas, in others our progress was impeded by difficulty in identifying someone to lead the effort and/or finding sources of additional funds. Recognizing that our original estimate of the time needed for a significant revision of our programs had been unrealistic, we requested and received an extension of the contract (effective June 30, 1974) from its original termination date of December 31, 1974, to December 31, 1976. The Scope of Work was expanded at this time, to permit further development of curriculum changes begun under the original contract. On March 22, 1976, the contract was extended for one more year (until December 31, 1977) with no additional allotment of funds and with no further substantive changes in the Scope of Work. Effective March 10, 1978, the contract completion date was changed to March 31, 1978, again with no additional allotment of funds, to allow us to modify the approach taken in this report so as to expand its utility.

Although the deliberations of the various expert panels have influenced the curriculum and research agendas of a number of the School's programs, the

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[1] As of July, 1973, the contract was transferred to the Health Resources Administration, Bureau of Health Resources Development.

[2] From the Edited Transcript of the Health Services Panel, September 27, 1972.

major educational and research initiatives undertaken with support of Contract NO1-AH-34018 (formerly NIH 73 4018) have been largely concerned with health services delivery systems in the United States. We have delayed effecting more widespread change in part because of our limited resources, but in larger measure because of a decision to proceed in stepwise fashion, developing a set of strong new programs in one problem area that could serve as models for approaching other areas. Because many panels laid emphasis on manpower and research needs related to health services policy and management, we chose to concentrate on this area first.

The model educational program we have developed, the two-year, master's level Graduate Program in Health Policy and Management (the "HPM program"), is already one of the major programs in the School, and has begun to influence training in other areas. For the remainder of this report, we plan to utilize a "case study" approach of sorts, focusing on the development of this program and on other new educational, research, and service activities related to the health services area. We believe that this will be more instructive than a detailed chronicling of all activities conducted under this contract, which has already been provided in the periodic progress reports we have made.

After presenting an overview of the contract, including the Scope of Work, the contract administration, the panels that have been held and their general conclusions, and the manner in which panel recommendations have been implemented, we will go on to a more detailed summary of the panel discussions that led to the establishment of the Health Policy and Management Program. We will then describe the program itself, its evolution, and our conclusions concerning its more and less successful aspects. We will also discuss its relationship to other programs in the School, with respect to (1) plans to apply the disciplines of policy and management to new areas and (2) ways in which our experience with the HPM program is proving useful in the revision of other programs.

After reporting on a number of other activities related to the health services area, we will describe several efforts that have complemented the HPM program, in the areas of midcareer education (Executive Programs in Health Policy and Management); interdisciplinary research directed toward the evaluation of health practices (Center for the Analysis of Health Practices); and promotion of informed decision making concerning health policy issues through education of the public, the media, and legislative committees (Office of Health Policy Information). Finally, we will discuss the directions we plan to pursue in the future, particularly in the environmental health area, and will describe several new projects that are in the planning or early implementation stages.

It should be noted that few of the activities we will describe have been supported exclusively with funds from Contract NO1-AH-34018. In many cases, the support received from the contract has enabled us to explore new areas and to initiate new activities, but substantial additional funding has been required before programs could be developed fully. An attempt has been made to identify the source of funding if other than the Bureau, but it should be recognized that no precise breakdown of support in each area is offered. Because the activities we plan to discuss are interrelated, and many are an out-

growth of explorations originally funded under this contract, it seems appropriate to discuss them here.

We believe that the support provided by Contract NO1-AP-34018 has enabled us to make significant progress in the development of educational, research, and service programs that are responsive to the public health needs of our society. At the end of this report, we will summarize what we feel we have learned from the process of change and reorientation, and will describe the directions we think are most likely to be fruitful in the future. Throughout the report, we will try to point out the problems we have had, as well as our successes, in the belief that both can be instructive. While recognizing that all institutions have different goals and face different obstacles to their attainment, we hope that this picture of the process of change in our school may be useful to other schools that are trying to redefine their mission in light of the changing health problems of our society.

II. OVERVIEW OF CONTRACT

Scope of Work

As stated in the Scope of Work,* the overall objectives of the contract were as follows:

> Study, evaluate and, to the extent feasible within the period of performance of this contract, modify and augment the educational program of the Harvard School of Public Health, including the School's related professional training, specialized consultative services, technical assistance, and health services research activities. The objectives of this project shall be the design and implementation of new academic programs utilizing existing teaching resources in the School, elsewhere on the University campus, and in the community, and the creation of new academic programs with which to train public health professionals who are prepared to meet current and emerging public health problems, including those created by changes in health care delivery systems.

As the first step toward these objectives, a series of expert study panels was to be held, to examine manpower and research needs in a variety of public health areas. The areas to be explored were to include, but not be limited to, the following: systems for the delivery of health and medical care; behavioral and social problems as they relate to community and environmental health; environmental health services; communicable disease control; and international health. After identifying likely changes in the health services delivery system over the next decade, each panel was to describe the kinds of public health personnel that would be needed, their functions, and the types of educational programs required to train them. The panels were to consider requirements for education in disciplines outside the traditional boundaries of public health and to discuss needs for field training in both new and traditional types of health agencies and institutions.

The second major task identified in the Scope of Work was to 'develop, describe, and experiment with key modifications" in the School's educational programs on the basis of the recommendations made by the expert panels. Where appropriate, the assistance of related professional schools and programs of the University was to be called upon, so that the program in public health would utilize the full range of available educational resources.

* When the contract was extended on June 30, 1974, the Scope of Work was expanded to permit further development of curriculum changes begun under the

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*A copy of the complete Scope of Work, including the modifications that were made when the contract was renewed on June 30, 1974, is included in Appendix A.

original contract (see Modification 4 to the Scope of Work, included in Appendix A). The focus was to be on several areas in which panels had been held near the beginning of the contract, namely, health policy and management, maternal and child health, mental health, and health in developing countries. Modification 4 also called for examination of the relationship of the Master of Public Health program to the Health Policy and Management Program developed under the original contract, and for establishment of joint and visiting professorships with other schools of the University.

Administration

In accordance with the Scope of Work, an Office of Program Planning (OPP) was established at the School to administer and oversee work done under the contract. In addition to Dean Hiatt and Associate Dean James L. Whittenberger, the Office's membership has included Dr. Herbert Sherman, Director; several staff members; and directors of the various programs and activities initiated under the contract. Included in Appendix B is a list of those individuals who have been members of OPP for part or all of the duration of the contract.

An Advisory Council of consultants met once or twice a month during the early part of the contract to assist OPP in organizing panels and in carrying out panel recommendations, once these had been approved by the School's faculty. Faculty members were frequently invited to participate in the Advisory Council's discussions. Late in the first year of the contract, it was decided to suspend regular meetings of the Council, but several of its members continued to advise the Dean on an individual basis.

Project officers for the contract have included Dr. Fred J. Payne, Dr. Clay E. Simpson, and most recently, Mr. William Holland. Since the inception of the contract, meetings have been held periodically with the project officer and others in Washington and Boston. In accordance with the requirements of the Scope of Work, progress reports describing work accomplished, problems encountered and their proposed solution, and future plans were submitted quarterly until the contract renewal date (June 30, 1974) and semiannually thereafter. In addition, the fourth quarterly report and the second, fourth, and sixth semiannual reports each constituted an annual report, summarizing work done under the contract during the preceding year.

Panels

During the course of the contract, panels were held in all major areas of public health, and in a number of more specialized sub-areas, to analyze the School's current programs and national needs, and to recommend new directions. Most of the meetings were organized by the Office of Program Planning, with the help of its advisers. The panels that were held included the following:

Panel on Health Services
September 27, 1972; October 24-25, 1972

Panel on the Environment and Health
December 4, 1972

Panel on Maternal and Child Health
May 25, 1973

Panel on Health in Developing Countries
September 14-15, 1973

Panel on Mental Health
December 6, 1973

Panel on Occupational Health
February 28, 1974

Panel on Toxicology
July 23, 1974

Panel on Nutrition
November 12, 1974

Meeting on Smoking
December 7, 1974

Panel on Air Pollution Control
December 17, 1974

Panel on Aerospace Health and Safety
January 13, 1975

Panel on Quantitative Methods
May 23, 1975

Panel on Infectious Diseases (U.S.)
July 29, 1975

Meeting on the Epidemiology and Mechanisms of Chemical-Related Cancer
October 11-12, 1975

Panel on Epidemiology
May 26, 1976

Panel on Services for Handicapped Children -- Designing a Public Health Curriculum
June 2-4, 1976

Panel on the Nursing Component of the Public Health Curriculum in the Master's Degree Program
June 13-15, 1976

Panel on Long-Term Care and Aging --
Priorities for the School of Public Health
September 15-17, 1976

In most cases, panel members were selected to include potential employers of graduates of the School in the field under consideration, as well as experts in that field and in related fields from other parts of Harvard, M.I.T., and other universities. Interested faculty and staff from the School of Public Health were also invited to attend panel meetings, generally as observers.

We attempted to include among the membership of most panels representatives of disciplines that fall outside the traditional boundaries of public health, out of a belief that input from many fields is essential for the solution of complex health problems. This approach was not invariably successful: participants from non-traditional areas sometimes did not know enough about public health to make a useful contribution, or lacked credibility with representatives of more traditional areas. However, in most cases the panel discussion seemed to benefit greatly from the participation of people who would take an unconventional view of the problems under discussion.

With some exceptions, the panels had similar goals and followed roughly the same format. In each case, panel participants were sent a letter of invitation stating the general purpose of the meeting and a copy of the "Charge to Panels," in which the goals and organization of the panels were described in more detail. Copies of a typical letter of invitation and of the most recent version of the "Charge to Panels" are included in Appendix C. Prior to the panel meeting, participants were also sent background material describing current educational and research activities at the School in the area in question, as well as any relevant activities elsewhere in the University.

In the majority of cases, panel meetings lasted one full day and consisted of a relatively unstructured discussion concerning general educational and research needs in the field in question, and how the School could help meet those needs. In some instances, panel members split up into committees to consider particular questions; some panels met for periods longer than a day, or met several times, with the intervening period being devoted to preparation of individual reports or recommendations.

For each of the panel meetings, a report on the discussion was prepared. In the case of some of the earlier panels, the participants themselves prepared a report during or after the meeting. Most of the later panels were taped and the tape transcribed and edited. For some of the smaller meetings, the only report was a brief summary based on notes taken during the meeting. Copies of all panel reports were sent to the project officer and panel participants; most were also sent to the entire faculty of the School and other interested individuals.

There were some exceptions to the "standard" format that was followed by the majority of the meetings. For instance, several panels were smaller than the others and more limited in scope (the Panel on Nutrition, the Meeting on Smoking). Other panels dealt with a more narrowly defined topic and/or had

some more specific secondary purpose, such as planning for a particular new educational or research program (the Panel on Aerospace Health and Safety; the Meeting on the Epidemiology and Mechanisms of Chemical-Related Cancer; and the three curriculum-planning panels organized by the Department of Health Services, on Services for Handicapped Children, Nursing, and Long-Term Care and Aging).

In addition, in one area -- population control -- the School's activities were reviewed not by a panel held under the contract, but by a University-wide Population Review Panel appointed by President Bok, which met on December 13, 1972, and on February 8 and 9, 1973, to examine the University's activities in the population area. Finally, needs in the area of consumer health education were reviewed by a completely different mechanism, namely, by letters sent to consultants on August 30, 1972, asking for their views on appropriate activities for the School in this area.

Considered as a first step in the process of planning and implementing change, the panel meetings generally provided a good overall review of particular areas, as well as a fresh perspective on needs and problems and many ideas for innovative new approaches. It must be recognized, however, that there is a tendency in such meetings for the discussion to stay on a relatively general level, and that, in any case, a one- or two-day meeting is not long enough to develop a detailed set of recommendations. Considerable further discussion and planning is required before implementation of any changes deemed desirable can begin.

Because the panels were held in such disparate areas, it would be difficult to arrive at a general summary of their recommendations. However, a number of points were made repeatedly by different panels, and were therefore given particular weight in developing new programs under the contract. These recurrent themes included the following:

1. Much emphasis was placed on the highly significant role played by the management and administration of health programs and by health policy and planning considerations in a wide variety of public health areas. Consequently, many panels saw a great need for people knowledgeable in areas related to medicine and health and in the management and analytic sciences. Several panels suggested that such training be directed toward people who would become middle managers -- the level from which the key policy makers would eventually emerge.

2. Many panels stressed the problem-oriented nature of public health and the resulting need for interdisciplinary cooperation and for collaboration with other parts of the University in the development of public health programs.

3. The point was frequently made that the health care delivery system is in a period of rapid change, and students need to be provided with the flexibility to deal with this. For this and other reasons, a number of panels emphasized the value to students of field training in appropriate agencies, courses

utilizing the case method, and other forms of "clinical" training that involve working on real problems. To be able to provide such training, cooperative relationships with agencies and institutions in the community are needed. These were seen as having the additional value of keeping programs relevant to "real world" needs and problems.

4. Because practicing health care executives are in an especially advantageous position for effecting needed changes in the health care system, the development of midcareer programs was considered particularly important. In addition, many panels saw a need to educate undergraduates and medical students in aspects of public health.

5. Several panels mentioned the importance of maintaining a balance between basic and applied research, and of finding ways to interest individuals trained in classic academic disciplines in applied areas (e.g., by means of postdoctoral fellowships).

Implementation of Panel Recommendations

The panel meetings provided a good overall review of the needs in particular areas and many suggestions for new ways to meet these needs. Before implementation of panel recommendations could begin, however, considerable further discussion and planning was generally required, often extending over a period of months. Members of OPP, others in the School administration, and faculty members from relevant areas were among those involved in the planning process. In some cases a coordinator was designated to provide direction and leadership during this period. The Faculty Advisory Committee on Planning was consulted concerning the implementation of panel recommendations and was represented at meetings of the Office of Program Planning. The approval of the entire faculty was required in cases where a formal change in curriculum was to be made.

The first step in the planning process was to select among the options proposed by the panels. In deciding which recommendations to pursue, we were influenced not only by what we judged to be the relative merit of different courses of action, but also by their practicality and their "fit" with the resources of the School and the University.

The next step toward implementation of panel recommendations involved finding a leader -- either within the School or University or outside -- for the new effort being planned. This was generally a crucial step. In areas where new programs or activities got under way and developed rapidly and successfully, this was often due largely to our good fortune in identifying an enthusiastic and able person interested in directing the effort. Conversely, in a number of areas our progress has been greatly impeded by the difficulty we have experienced in finding a suitable leader.

Although some new programs have been developed primarily with funds from this contract, in most areas we have found it necessary to obtain additional

funding from other sources before significant progress could be made. Thus, the acquisition of financial support for new activities has also been a crucial step in the implementation of panel recommendations. The development of new programs, especially, requires large expenditures of manpower and other resources. In some cases, difficulties in finding sources of support have been as great an obstacle to progress as problems in identifying a leader for new activities.

Once a choice has been made as to which options to pursue and a leader and funding for the effort have been found, the process of developing and experimenting with new educational and research programs and activities can begin. We have tried to build into this process mechanisms for obtaining continuous feedback and for encouraging communication among those involved. Also, in both the planning and implementation stages, we have attempted to draw on the existing strengths of the School and to utilize resources available elsewhere in the University to the greatest extent possible. The latter task has involved finding ways to interest individuals from other parts of the University in health problems and developing a variety of specific collaborative arrangements.

The final stage in modifying the educational and research programs of the School has been evaluation of new activities. We have tried to make this process as critical and objective as possible. Formalized program evaluation, repeated at regular intervals, helps to ensure not only that high standards are maintained, but also that programs are flexible and relevant to societal needs. In the case of our new educational programs, faculty, administrative personnel, current students, graduates of the program who have been working for various periods of time, practicing health care executives, and employers of our graduates have all been involved in program evaluation. We believe that such evaluation is one of the primary sources of the strength of the new programs we have developed.

At the start of this contract, we were quite optimistic that significant modifications in the School's programs could be made within the space of a year or two. By the time of the contract reneval, in June, 1974, we had revised that estimate upward to a considerable extent. As should be apparent from the preceding overview of the steps involved, the process of revising existing programs and developing new ones takes time. Deciding what to do and developing plans, identifying and recruiting a leader, and finding sources of support can take many months. Before new educational programs can be evaluated in more than preliminary fashion, they must be repeated several times and the graduates given the opportunity to judge the usefulness of their training against the requirements of their careers. It is unrealistic to expect this process to take less than several years. In addition, changes and innovations are rarely introduced without opposition; time may be required at both the planning and the evaluation stages to convince some people that existing programs need examination and may need revision and that some new programs may have merit.

During the past several years, our efforts have been concentrated heavily in areas concerned with the structure and function of the health care system in the United States, as mentioned earlier in this report. To some degree, this has stemmed from the difficulty of developing new programs in many areas simul-

taneously, given the length and complexity of the process. However, in large part our concentration on this area was the result of a conscious decision based on the panels' repeated emphasis on the need for health policy analysts and managers. We have tried to create programs that are responsive to this need for people who combine training in the management and analytic sciences with knowledge of medicine and health.

As stated previously, for the remainder of this report we intend to focus on new activities in the health services area, particularly the Graduate Program in Health Policy and Management. The next section will provide an illustration of the implementation of panel recommendations by describing the evolution of this program and our future plans concerning it.

III. GRADUATE PROGRAM IN HEALTH POLICY AND MANAGEMENT

Relevant Panel Recommendations

The immediate impetus for the establishment of the Graduate Program in Health Policy and Management came from the recommendations of the Panel on Health Services, held on September 27 and October 24-25, 1972, and, to a lesser extent, from those of the Panel on the Environment and Health, held on December 4, 1972. However, in one sense the program is responsive to all the panels held under the contract, since it incorporates many of the themes that recurred in the panel discussions: the need for health policy analysts and managers; the desirability of an interdisciplinary approach and of collaboration with other parts of the University; and an emphasis on "clinical" training that involves working on real problems.

A list of participants in the Panel on Health Services appears in Appendix D. By design, participants included a group representing different disciplines that are or could be involved in the training of health-related manpower (medicine, health management, public policy, law, economics, behavioral sciences) and a second group representing governmental agencies, industry, and other "consumers" of health manpower. The panel meetings involved both general discussion of needs in the field of health services and relevant programs at Harvard, and more focused consideration, in separate committees, of issues related to health policy analysis, organization and boundaries, and manpower and curriculum.

The recommendations of the panel were based in large part on the participants' individual and collective sense of where the health care system seemed to be heading. Their major conclusions included the following:

- Like other sectors of society, the health care system is changing rapidly. This both necessitates and hampers attempts to make educational programs relevant to societal needs.

- In the future, health will be in a competitive position vis-à-vis other societal goals, and the health care system will be characterized by closed-end funding. This will have far-reaching consequences; it will be essential to ensure that resources are deployed in the most cost-effective and equitable fashion and to find ways to make the public's expectations of the health care system more realistic.

- The trend toward involvement of the public sector in health will continue, creating numerous planning and administrative positions.

- A problem-oriented, interdisciplinary approach is likely to be common in the health care system of the future.

The panel's picture of the health care system and how it might evolve led naturally to a number of conclusions about the kinds of manpower that would be required in the future. The panel agreed that the central focus of health services teaching and research should be "health systems planning and management," and that the greatest need was for "skilled people who understand health and are analytically or management oriented." The training these people receive should provide them with the flexibility to cope with change and with the ability to function in an interdisciplinary setting.

It was agreed that the goal of such training should be to produce people who might ultimately occupy "key" jobs which would be of importance in shaping health services in the future. Since graduates almost certainly could not be placed directly into such jobs, however, the immediate focus should be on training people to work as planners, evaluators, and general managers of health care delivery systems -- the kinds of occupations that have traditionally formed the reservoir of supply for key policy positions.

In what kind of setting should these people be trained? The panel agreed that all the necessary elements of such training exist in universities like Harvard -- the question is how to bring them together. As one panel member pointed out, schools of public health used to produce most of the administrators, planners, and managers in the health field; however, "the market has changed," and these kinds of positions are now often filled by people with M.B.A.'s or M.P.P.'s or by lawyers, economists, or statisticians. Although many elements of the training such people receive are useful or even essential for planners and managers in the health field, the panel felt that a background in health was important too. The multidisciplinary, problem-oriented nature of schools of public health was seen as qualifying them to bring these various elements together.

The panel thought that specific situations in a particular university should determine first, whether this approach was taken, and second, what methods were used to meld the various types of knowledge needed into a coherent program. A number of ways to accomplish the latter task were proposed: offering joint degrees with other schools in the University; cross-registration in courses given elsewhere; "importing" members of other faculties to teach particular courses; joint appointments; and appointments in the school of public health of people qualified to teach policy analysis and management techniques. The panel acknowledged that there are potential problems with some of these approaches, e.g., the lack of career ladders for people with joint appointments and the difficulty of attracting to a school of public health first-rate people whose natural "home base" may be in a school of business administration or public policy.

If a program in health policy and management were to be developed at the Harvard School of Public Health, panel members thought there would be a need for organizational reform to facilitate a problem-oriented approach. Specifically, it was suggested that there be some sort of integration of the Departments of Health Services Administration, Maternal and Child Health, and Behavioral Sciences; the Center for Community Health and Medical Care; and the Department of Preventive and Social Medicine in the Medical School.

The panel's Committee on Health Policy Analysis identified several further characteristics of the kind of environment in which people in this field would flourish. Because health policy analysts are "middlemen" between the scholars and the administrators, they need proximity both to fundamental research in health services and to operating health care agencies and organizations. In addition, it is important that faculty members in this field be accepted intellectually and professionally by those in discipline-oriented departments -- a potential problem area.

Through its work in separate committees, the panel developed a fairly detailed picture of a possible new program in "health services policy and management." As the name implies, the curriculum would emphasize training in management and policy analytic skills of a "generalist" nature, but with a focus on the health care system. The program would be designed so as to provide an integrative experience in an interdisciplinary environment. The panel thought the program should be two to three years in length, should lead to a Master of Science degree, and should probably be developed in collaboration with the Business School and the Kennedy School of Government. Both M.D.'s and non-M.D.'s should be admitted. A few panel members thought that the new program might eventually replace the Master of Public Health program.

In developing specific recommendations concerning the curriculum, the panel considered the following: what skills would be most useful for health policy analysts and managers as these jobs now exist; what skills would be most transferable in a field where occupational content is in a state of flux; and what skills would be useful at various stages of a career. Because students admitted to the program would have diverse backgrounds, the panel tried to define the types of knowledge and experience a graduate of the program should have. The steps by which students acquired this knowledge would vary; for instance, physicians might proceed at an accelerated rate, while recent college graduates with no exposure to the biomedical sciences might do extra work in this area.

Following a pattern common to many professional schools, the panel specified a core of knowledge to be expected of all program graduates and a second group of elective courses that would permit specialization in planning, management, or some combination of the two. The following areas were to be included in the core curriculum:

- Human biology
- Quantitative analytic techniques (statistics, biostatistics, decision theory, analytical techniques for epidemiology)
- Economic and political analysis
- Management of human behavior (personal psychology, group behavior, organizational behavior and control, cultural behavior)

- Options in health care policy, institutions, and planning (a survey course of the history and politics of physical and mental health policy)

The elective curriculum in the planning area would include courses dealing with such topics as advanced quantitative techniques, computer sciences, operations research, sociology, economics, and government. Electives in the management area might include health services equivalents of business school courses in marketing, finance, labor relations, information systems, and so on; public finance; and health law and regulation.

In addition to the formal academic curriculum, the panel thought it important that each student be required to analyze and solve a specific policy or administrative problem in the health field. Usually this would entail field work in a health services organization, as part of a summer work program or carried out during the academic year.

The panel identified several potential problems with the program they had described. First, they expected that there would be a shortage of faculty and of teaching materials with the necessary health services orientation, and that the program would have to invest considerable resources in remedying this situation. Second, the panel stressed the importance of ensuring that the curriculum stay aligned with new career developments in the field, perhaps through periodic review by an advisory body representing potential employers of the program's graduates.

The panel acknowledged that many elements of the curriculum they had outlined were already available in the School or the University. However, they thought that the underlying spirit of their proposals represented a new direction, in several respects. First, the program was to emphasize the quantitative and analytical aspects of the planning and management sciences over the descriptive. Second, in both the courses and the field experience, the actual application of analytical techniques was to have a prominent role. Finally, the importance of the M.D. was to be deemphasized and replaced with the acquisition of a sufficient background in medical science to allow students to communicate with physicians.

In summary, the panel outlined a proposed new program in health services policy and management that was "like the M.P.P. course at the Kennedy School in the core curriculum, and an amalgam of the M.B.A. and the M.P.P. in its elective stage." The curriculum would be different from these programs, however, in its "health services focus, both in the types of courses and in the teaching materials."

Many of the recommendations of the Panel on Health Services were reinforced by the discussions held by the Panel on the Environment and Health, which met on December 4, 1972, and by the Dean's Advisory Council, at two follow-up meetings on January 20 and February 17, 1973. During the meeting of the Panel on the Environment and Health, Dean Hiatt described the program in health policy and management outlined by the Panel on Health Services, and asked if it could help meet needs in the area of the environment as well.

Many of the participants were enthusiastic about this idea, particularly if a track or tracks specializing in environmental issues were developed as an option for the program's second (or possibly, third) year. Although the proposed program could not in itself train people for highly technical positions doing toxicological research, for instance, panel members thought its graduates would be very well qualified for jobs as managers of regulatory programs, policy analysts in environmental areas, and similar posts. In addition, a number of participants expressed interest in having students in the program come to their organizations as interns.

Overview of Program

In response to the recommendations of the Panels on Health Services and the Environment and Health, a major new teaching program was developed -- the Graduate Program in Health Policy and Management. Members of the Office of Program Planning, faculty from the School of Public Health and other parts of the University, and the Dean's Advisory Council were all involved in the program's development. The new "HPM program" was approved by the faculty of the School of Public Health on January 25, 1973, and the first students enrolled in the fall of that year.

Both in its conception and in its evolution, the HPM program has adhered quite closely to the recommendations of the Panel on Health Services. The program is two years in length and leads to the degree of Master of Science in Health Policy and Management. It is designed to prepare students for careers either in health planning and regulation or in the administration of health programs and institutions. In accordance with the panel recommendations, the M.D. degree is not required for admission; in fact, one of the program's explicit purposes has been to provide highly qualified postbaccalaureate students with an alternative to medical school as a means of entry into a health-related career.

Built around a first year consisting primarily of "core" courses and a second year consisting primarily of electives, the program's curriculum has a strong analytic and quantitative orientation. A summer internship program and a required year-long tutorial field experience in the second year give students ample opportunity to apply techniques learned in the academic part of the program. Adequate feedback concerning the program's relevance to "real world" problems has been ensured by this emphasis on field work and by the establishment of a "clinical" faculty composed of practicing health care executives.

As recommended by the Panel on Health Services, the HPM program has tried to utilize the resources available within the University to the fullest and to provide students with an educational experience which integrates knowledge and skills drawn from a variety of disciplines. The John F. Kennedy School of Government and the Harvard Business School have been most deeply involved with the program, although many members of other faculties have provided assistance as well. Collaboration with the Kennedy School and the Business School is particularly important in the program's second year, during which students are

encouraged to concentrate on policy skills, management skills, or the planning and administrative aspects of a substantive health problem area. Although no joint degrees have been offered, other mechanisms for achieving collaboration between faculties -- e.g., cross-registration and joint appointments -- have been heavily utilized.

When the HPM program was first established, it was an interdepartmental program with a wholly independent administration, headed by its director, Dr. Joseph J. Harrington, Associate Professor of Environmental Health Engineering in the School of Public Health and Lecturer on Environmental Engineering in the Graduate School of Arts and Sciences. Effective in the fall of 1975, the program was combined with the two-year Master of Science program in the Department of Health Services Administration, as the end result of efforts to coordinate the two. The combined program was under the direction of Dr. Harvey V. Fineberg, Assistant Professor of Health Services Administration.

At about the same time the two programs were combined, the Departments of Health Services Administration and Maternal and Child Health were merged to create the new Department of Health Services, as one step toward the kind of integration of activities in the health services area recommended by the panel. Thus, since the fall of 1975, the HPM program has technically been under the jurisdiction of the Department of Health Services, but has continued to be administered relatively independently within that framework.

As the program has become more firmly established as a successful and important part of the School's curriculum, increasing attention has been given to its place within the School and the University. It remains an interdisciplinary, University-wide program, through its involvement of people and resources from other faculties, and we plan to continue and expand that involvement in the future. We also hope that the program can become more nearly "School-wide," through the development of separate tracks or "spin-off" programs dealing with health policy and management issues in the areas of environmental health, nutrition, population, and international health, and possibly others as well. Plans are also underway to develop a track for medical students. Finally, we plan to work toward a more complete integration of the program with other kinds of activities in the policy and management area, such as the Executive Programs in Health Policy and Management.

During the five years the HPM program has been offered, it has changed and grown substantially. The sections which follow describe in greater detail what the program is like today, how it has evolved, and what we feel we have learned in the process.

Faculty

From the start, the HPM program has had as one major goal the recruitment of faculty who are highly qualified in their fields and committed to both teaching and research. The program has also tried to ensure the involvement of representatives of all relevant disciplines, whether within or outside the traditional boundaries of public health.

The faculty of the program have been drawn from the John F. Kennedy School of Government, the Harvard Business School, the Graduate School of Arts and Sciences, and the Harvard Medical School, as well as the School of Public Health. Many have held joint appointments. Areas or disciplines that have been represented include health services administration, environmental health engineering, health economics, epidemiology, political science, public policy, law, history of science, physiology, medicine, population science, nutrition planning and policy, behavioral science, biostatistics, statistics, operations research, and management.

Because the faculty have come from diverse fields and different physical locations, special efforts have been required to promote communication and a shared feeling of commitment to the program. This has been particularly important in the case of the "clinical" faculty (described in the next paragraph). Toward this end, periodic "retreats" or conferences have been held for both the academic and clinical faculties, to review progress, discuss the general direction of the program, and work on specific tasks like curriculum planning. An effort has also been made to involve faculty members in all aspects of the program, from admission of students to job placement of graduates.

Since its initiation, the HPM program has emphasized the establishment of connections to the "real world" of operating health care agencies and institutions, primarily through the extensive field work done by students. In the summer of 1976, a formal "clinical" faculty was established by granting academic appointments within the Department of Health Services to those field work preceptors who had shown outstanding commitment to students. Members of this group have included administrators and directors of hospitals and neighborhood health centers, the medical editor for a television station, members of a state office of health planning and a state rate-setting commission, a community health nurse, and individuals in a variety of positions in federal health agencies.

Each incoming student is assigned an adviser from both the academic and clinical faculties. In addition to supervising student field work projects, members of the clinical faculty have assisted in teaching and research, have provided valuable advice concerning the overall planning of the program, have served as role models for students, and have helped in career counseling. We believe that the expertise of practicing health care administrators and planners represents a relatively underutilized resource for schools of public health, and that there is ample justification for special efforts to span the gap between practicing executives in the field and members of an academic faculty.

Our experience with the HPM program has led to several general observations concerning the problems inherent in including individuals from non-traditional areas on the faculty of a program in public health. First, as the Panel on Health Services predicted, it is not always easy to attract to a school of public health outstanding representatives of disciplines whose natural base is elsewhere. This has proved less of a problem than we expected, particularly as the HPM program has become more established, and we have been very encouraged by the interest in health issues shown by individuals from a variety of fields. However, we have also been fortunate in being able to draw on the wide range of expertise available within Harvard University. The devel-

opment of a truly interdisciplinary program might be considerably more difficult in a setting where such expertise is lacking.

Again as the panel predicted, representatives of disciplines not traditionally associated with public health do not always find easy acceptance by those in more traditional areas. To some extent, the need to work toward such acceptance is at variance with the need to create a feeling of cohesiveness among a highly diverse program faculty. Thus, the relatively independent and tightly organized nature of the HPM program has in some respects impeded communication between members of its faculty and faculty in other academic areas. This situation is improving as our plans to expand the program into substantive health problem areas mature. There is little doubt, however, that an approach to public health education that relies substantially on non-traditional disciplines will take time to be accepted by those with a more traditional orientation.

Students

As mentioned earlier, the Panel on Health Services expressed the view that the M.D. degree is not required for a career in health planning or administration. Thus, when the Health Policy and Management Program was established in 1973, the minimum prerequisite for admission was a bachelor's degree with a distinguished academic record, including courses in mathematics, physics, chemistry, cell biology, and biochemistry. Our subsequent five years of experience with the program have not led us to begin requiring the M.D.; the minimum prerequisite for admission to the current program is a bachelor's degree with an excellent academic record, in either the natural or social sciences, and demonstrated ability to master the quantitative and analytic content of the program. However, we have identified a need for a more sophisticated familiarity with the health care system than the first few classes of HPM students possessed. We have tried to ensure that this need is met by seeking applicants who have had pertinent work experience in the health care field or prior graduate or professional training, although neither characteristic has been made a formal prerequisite for admission.

Our conclusion that the M.D. is unnecessary for careers in health planning and administration does not imply a conclusion that training in these areas is unnecessary for M.D.'s. On the contrary, we feel that training in policy analysis and management skills, such as that offered by the HPM program, is both greatly needed and generally lacking in the backgrounds of physicians whose careers involve extensive planning and administrative responsibilities. We are now undertaking efforts to interest more physicians in training in policy and management through development of a track for medical students within the HPM program and through better coordination of the MPH and HPM programs.

The backgrounds of the HPM Class of 1979 reflect the program's increasing emphasis on relevant work experience. Twenty-nine of the thirty-four students admitted to that class had work experience in the health care field of one to sixteen years' duration after receipt of the baccalaureate degree (as compared to nineteen out of thirty in the previous class). Examples of the kinds

of positions previously held by these students include hospital administrative coordinator; health education specialist; health researcher in a public interest research group; hospital clinic finance officer; and nursing administrator. In addition, seven students in the Class of 1979 hold prior graduate degrees, in such areas as pharmacology, health education and economic systems.

Because of the growing weight being given to relevant work experience as a criterion for admission to the program, changes are being made in the mechanisms used to recruit potential candidates. Rather than emphasizing recruitment at the undergraduate level via career placement offices, the program is concentrating increasingly on identification of potential applicants who are currently working in the health sector. Alumni of the Graduate and Executive Programs in Health Policy and Management, as well as members of the academic and clinical faculties, are being used in these recruitment efforts.

In addition, the program is seeking ways to draw students from a broader geographical range. The majority of applications continue to come from persons who reside on or attend colleges and universities on the Eastern seaboard. In the future, we seek to attract more applicants from other states, in the hope that they would return to health-related positions in these areas after completion of their academic work.

One measure of the success of the HPM program is the number and quality of the applications received. Over 200 applications were submitted for admission to the Class of 1978, and roughly the same number for admission to the Class of 1979. In each case about 30 applicants were selected for admission. This application-to-admission ratio of about 7 to 1 is the highest of all programs in the School. It is on a par with the application-to-admission ratios of the Harvard Business and Law Schools. In addition, the quality of the applicant pool has been excellent; those who have been selected for admission have more than met the program's high standards in terms of academic records, personal characteristics, and work experience suggesting potential for achievement in the field of health policy and management.

In our experience, it has been important to be able to guarantee newly admitted students some kind of financial assistance. We are currently seeking ways to ensure that we will have reliable sources of funds for student support in the future.

Curriculum

Because the Health Policy and Management Program was developed "from scratch," it was possible to design the curriculum as an integrated academic experience explicitly directed toward preparing students for careers as health planners, policy analysts, and managers. The program was especially tightly structured during the first two years it was offered. As a result of extensive planning and development efforts during the spring and summer preceding the arrival of the first class in September, 1973, four new courses were offered that fall, forming the "core curriculum" of the new program. All HPM students were required to take these courses, which comprised their entire program dur-

ing the first year. In 1973-74, enrollment in these courses was restricted to HPM students.

Along with the more specialized work to be done in the second year of the program, the core courses were intended to provide students with (1) a background in biology and medicine sufficient to permit them to deal knowledgeably with physicians and biological scientists and with data collected in those fields; and (2) analytic and quantitative preparation that is normally lacking in medical education, in the analytic sciences, economics, administration, and public policy. Topics covered by the core courses were very similar to those suggested by the Panel on Health Services, with the addition of a course focusing on environmental health. The course titles indicate the areas covered: "Human Biology and Medicine"; "Quantitative Analysis of Health Problems"; "Environmental Health Evaluation and Management"; and "Origins of Public Health Practice: Introduction to Welfare and Health Economics."

The following brief descriptions of these courses will give a more complete picture of the content of the original core curriculum. Building on students' backgrounds in biology, the first half of "Human Biology and Medicine" introduced the major principles of human physiology and general pathology. The second half of the course provided students with insight into the process of medical care through first-hand experience with health care delivery in a variety of settings. (It was not, of course, intended to equip students to deliver care themselves.) "Quantitative Analysis of Health Problems," the second core course, was designed to provide understanding of a broad range of quantitative techniques and ideas, technical competence in a selected few techniques, and the critical capacity to evaluate the power and limitations of quantitative analyses. Among the major topics covered were the theory of uncertainty and models of probabilistic systems, research design, data analysis, deterministic modeling, and optimization techniques.

The third course, "Environmental Health Evaluation and Management," presented an introduction to planning for environmental quality management and to the use of epidemiologic and direct methods in assessing biological response to environmental insults. Finally, the course on "Origins of Public Health Practice" examined the social context from which corporate responsibility for public health has emerged in Western nations, focusing on problems in the development of public policy that would serve to introduce historical methods in comparative studies, demography, epidemiology, and biomedical sciences. The course also provided a selective introduction to microeconomic principles and analysis, utilizing examples applying such analysis to health problems.

From the start, the HPM program has placed substantial emphasis not only on rigorous academic training, but also on field experience in which the learned skills can be applied to real problems. This emphasis led to the development of a pilot "summer internship program," offered for the first time in the summer of 1974 to students in both the HPM program and the Master of Science program in Health Services Administration. Although some difficulty was initially experienced in finding positions, students were eventually placed with fourteen different organizations, ranging from hospitals to an

insurance company. This pilot program was successful enough that participation in a summer internship between the first and second years has been a required part of the HPM program ever since. (A more detailed discussion of the field-work portion of the program is included in the next section.)

Throughout the first year the HPM program was offered, the teaching staff met periodically to review the curriculum. A course evaluation was also conducted, with student participation. On the basis of these activities, several changes were made for the 1974-75 academic year. A background reading list was provided in the summer to allow a quicker start in the fall. The "closed core" approach was modified slightly: students were permitted to "place out" of courses for which they were overqualified, and courses in the program were opened, within loose limits, to students in other programs. A few changes were made in the content of the core courses, and progress occurred in the development of several new, more specialized second-year courses, e.g., a course in behavioral science as it relates to the management of human resources in health care organizations. Also, an informal luncheon seminar series led by practitioners in the health care field was added to the program for first-year students.

At the same time that these changes were being made in the first-year curriculum, members of the Class of 1975 had moved on to the more advanced second-year work. Students had the option of taking a health management-oriented program in conjunction with the Harvard Business School, a health policy-oriented program in conjunction with the John F. Kennedy School of Government, or a program in one of the health specialty areas within the School of Public Health. Although there was some consideration of developing joint degree programs with the Business School and the Kennedy School, the arrangements that were eventually made were less formal than this, involving heavy cross-registration by second-year HPM students in advanced principal electives in the policy and management areas and involvement of faculty from the Kennedy and Business Schools in teaching in the HPM program and in review of students' proposed choice of courses.

In addition to cross-registering for courses at the Kennedy and Business Schools, second-year HPM students also took advanced courses in the Graduate School of Arts and Sciences and at M.I.T.'s Sloan School of Management. All second-year students took some electives at the School of Public Health, as well as the one required second-year course, a health research workshop given at the School.

Several factors combined to prompt changes in the curriculum in 1975-76 -- the third year the program was offered. As mentioned earlier, effective that fall the HPM program was merged with the two-year Master of Science program in Health Services Administration, and this necessitated a review of the curriculum by faculty and students. The feedback received from students was largely favorable, and there was basic agreement that the core requirements were substantially valid, especially with respect to quantitative methods, epidemiology, and analytical micro-economics. However, students felt they needed a greater range of choice of curriculum, particularly in the first year. As a result, steps were taken to make the curriculum more flexible in 1975-76, e.g., by allowing students to take some of the required core courses during their second

year at the School. All of the original core courses were available in 1975-76, several in revised form. Some were still required, and most of the remainder were strongly recommended.

Other changes made during 1975-76 included the expansion of the health research workshop into the "Applied Research Seminar," a year-long tutorial field experience required of all second-year students. Introduced partly because of the success of the summer internship program, the seminar provided students with an opportunity for additional field work (mostly in conjunction with their summer preceptors) and for discussion of their experiences with classmates in scheduled seminar sessions. (The internship program and the Applied Research Seminar are discussed more completely in the next section.) In addition, a committee was established to review the individual programs submitted by students in cooperation with their faculty advisers. By having students submit in their first semester a tentative selection of courses for the remaining three semesters, the advisory system was improved, and more accurate forecasting of demands on other schools in the University was made possible.

During the three years that have passed since the HPM and PSA programs were combined, the curriculum has continued to be reviewed and evaluated by a variety of means, including discussion in faculty retreats, meetings of the administration with faculty and students, and written student evaluations. In addition, separate curriculum planning committees were established in the areas of quantitative and economic analysis, social sciences, management sciences, and substantive health problems. The committee in each area has responsibility for review and improvement of existing courses, identifying areas of need, and planning new curriculum offerings.

These various methods of evaluation have served to identify problem areas in specific courses and weaknesses in individual teaching methods; steps have been taken to correct such problems. Program evaluation has also led to more general recommendations for changes in the curriculum, most of which have been carried out. First, the lack of flexibility of the core curriculum has continued to be mentioned as a problem. Although the core requirements have actually been increased slightly over the past several years, so that a little more than half of the two-year program now consists of required work, an attempt has been made to introduce greater flexibility by dividing courses into modules and by allowing students a choice of several different courses in required areas. Students continue to be permitted to defer some of the core courses to their second year and to be exempted from those in areas where they can demonstrate prior proficiency.

There have also been a number of changes in the content emphasized in the curriculum. The original course in environmental health is no longer part of the required core, and less stress is given now than previously to human biology and medicine. Areas that have been given increased emphasis include management skills, health economics, and health care issues and institutions. The current core curriculum is designed to provide the basic analytic skills and knowledge needed by professionals serving in both policy and management roles in the health field. Topics covered in the core courses include quantitative

methods, epidemiology, health care issues and institutions, economics of health institutions and the health care system, political and bureaucratic analysis of health care, basic management skills, and sociological and historical perspectives on health.

Evaluation of the curriculum identified several areas in which there was a significant need for new courses, including (1) management courses geared to health issues; (2) advanced application courses in health planning; (3) courses dealing with ethical issues and the role of values in health care; and (4) courses presenting basic concepts of clinical medicine for the non-physician professional who will be planning and managing the delivery of health services. A large number of new courses -- both required courses and electives -- have been developed during the past few years to meet these needs. The following partial list of titles will give an idea of the range of topics covered: "Introduction to Control and Finance"; "Labor Relations"; "Strategic Issues in Personnel Management"; "Planning Social Change"; "Economics of Health Planning"; "Reimbursement Systems"; "The HMO"; "Sociology of Medical Care"; and "Medical Approaches to Illness." (A complete list of required core courses and a partial list of electives in the current program is included in Appendix F.)

Partly as a result of the interdisciplinary nature of the faculty, many of the courses that have been developed take an experimental, innovative approach to their subject matter. Also, a large proportion of the HPM courses use the case analysis method or are otherwise designed to involve students actively in the process of acquiring and evaluating new information. One example is a workshop in health planning, in which students apply a decision analysis approach to health planning problems currently confronting agencies in New England. A second example is a course designed to make students aware of the choices inherent in governmental programs intended to bring about change in the health care system; the course is organized around a series of issues conceptualized as social choices which are made implicitly by health planners and regulators.

As the Panel on Health Services predicted, we have found a great shortage of case studies and similar teaching materials that are oriented toward the health field. This shortage is particularly acute in the management area. In cooperation with Executive Programs in Health Policy and Management, we have devoted considerable effort to the development of appropriate health-related case materials, and plan to continue this effort in the future. Many of these materials can be used, with some modification, in continuing education as well as degree programs. In most cases, the teaching plans and outlines and case materials we have developed could be readily adapted for use in other programs at other schools, and we intend to encourage this kind of sharing of educational resources.

The curriculum in the first year of the current HPM program is fairly structured, with individual differences closely monitored and controlled by program faculty. The curriculum for the second year continues to be much more flexible, with wide latitude for individual choice of courses. In addition to the required Applied Research Seminar, second-year students take a variety of courses in the School of Public Health, the Kennedy School, the Business School, and elsewhere. At the Business School, electives open to HPM students

include such courses as "Management Control in Non-Profit Organizations" and "Management Information Systems." At the Kennedy School, students in the program take such courses as "Quantitative Methods for Social Program Evaluation" and "The Law and Public Policy."

One significant change we have begun to introduce into the HPM curriculum is the development of "tracks" in various substantive public health areas. Once these tracks are developed, each student's program would concentrate on one of the two primary skill areas (policy or management) and on a substantive health area, such as health services, nutrition, environment, population, or international health. The current program provides most of the course work needed for the health services track; considerable progress has also been made in the development of a track in nutrition. A track for medical students may also be developed. (Our planned expansion of training in health policy and management is discussed in more detail in a later section.)

In summary, the Health Policy and Management curriculum as it has evolved emphasizes the following:

1. Education in skills and knowledge that will be useful in the analysis of complex problems, the formulation of policy alternatives, the effective integration of diverse bodies of specialized knowledge for decision-making purposes, and the translation of problem-solving capability into skilled managerial performance in a variety of administrative and political settings.

2. The importance of devoting attention both to the micro-administrative scale of executive actions in hospitals, health centers, and governmental agencies and to the macro-administrative scale of policy that influences the actions of interrelated sets of organizations and institutions operating in community, regional, and national environments.

3. Training in analytical techniques relevant to policy analysis, planning, evaluation, and management.

As stated in the current recruiting brochure, the program aims "to help students understand the enormously complex health system and to gain the skills needed to plan allocation of resources, to execute programs and to deliver health services." With the basic analytic skills provided by the core courses, the more specialized knowledge gained in the elective portion of the program, and the experience in applying the learned skills and knowledge to real problems provided by the field work, graduates of the HPM program seem to us to be well qualified for their chosen careers as health planners, analysts, and managers.

Field Training

Out of a strong conviction that training in an academic setting must be complemented by experience in problem-solving situations in the "real world," the Health Policy and Management Program has placed heavy emphasis on field work, as the Panels on Health Services and the Environment and Health recommended. The two components of the field training portion of the program were mentioned briefly in the previous section: a summer internship between the first and second years and an "Applied Research Seminar" during the second year. Both are required of all HPM students. The summer internship was part of the program from the beginning. The Applied Research Seminar was offered for the first time in 1975-76, partly as a result of the success of the summer internship; it evolved out of and replaced the original second-year health research workshop. Both the summer internship and the Applied Research Seminar were developed in conjunction with the Office of Extramural Health Programs, a new office established under this contract to develop ties between the School and operating health agencies and institutions. This office is described in more detail later in this section.

The summer internship program was offered for the first time in 1974, as a pilot project open to students who had completed one academic year in the HPM program or the two-year Master of Science program in Health Services Administration (later combined). Such students could be presumed to have had introductory courses dealing with the health care system, the economics of health care, quantitative methods, epidemiology, and other basic areas. The program was to involve two to three months' work experience in agencies, institutions, and organizations involved in health services. Students would have one or more prescribed tasks or projects and would be supervised by a "preceptor" in the organization, who would evaluate the student's performance. A report from the student on his experience would also be required, and a member of the faculty at the School would act as liaison and be available for consultation and evaluation of the student and program. Modest student stipends would be requested.

The basic elements of the summer internship program have remained much the same in the years since its first offering. From the start, we have had little difficulty identifying organizations interested in employing interns. Students have worked in a wide range of traditional and non-traditional settings, including hospitals, neighborhood health centers, governmental agencies at city, state, and federal levels, consulting firms, academic institutions, industrial health departments, the media, HMO's, and insurance companies. The problems students have worked on have also been diverse; examples include waiting time in a neighborhood health center, cash flow in a medical clinic, employee health education, nutrition education, Medicare claims processing, and the organization of community health services. A list of preceptors for the 1977 summer internship program appears in Appendix F.

At the end of each summer, a member of the HPM program staff -- generally the director of internships -- has site-visited interns and preceptors, both to discuss the student's performance and to evaluate the overall usefulness of the placement to both student and preceptor. Preceptors have also provided

written evaluations of students, and students have been asked to complete questionnaires concerning their experiences. These questionnaires have been used to evaluate placements further and have been available to members of the next class of HPM students for use in planning their own internships.

In part to ensure that student interns would have meaningful assignments, modest stipends have been requested for them. This has occasionally presented problems, since some organizations -- e.g., state and local governmental agencies -- have sometimes had difficulty finding the necessary funds, despite a strong interest in having interns work for them. As the internship program has become better established and more widely known, this problem has been alleviated considerably, partly because funds from foundations and other sources have become available to assist agencies in supporting interns. During the summer of 1977, student interns were salaried at a minimum of $800 a month.

Directors of the internship program have included Dr. H. Richard Nesson, Director of the Office of Extramural Health Programs; Mr. Gordon Chase, for a brief period before he became director of the continuing education program described later in this report; Mr. Arthur Berarducci, a member of the staff of the Office of Extramural Health Programs; and, most recently, Mrs. Karin Dumbaugh, Instructor in Health Services.

The director of internships has also been in charge of the Applied Research Seminar, a year-long tutorial field experience required of second-year HPM students. In most cases, students in the seminar continue to work with their summer internship preceptors; others take this opportunity to gain new and different professional exposure. Students generally spend about a day and a half a week in their field organizations during the academic year. In addition, the group meets with the director of internships for a series of weekly seminars, where they share their experiences, present reports on their research, and discuss topics of interest with members of the clinical faculty.

During the course of the seminar, students prepare reports on their research projects; many of these have been of professional quality, and several will result in publications. Reports prepared by students have dealt with such diverse topics as obstetric services in a neighborhood health center, a section of a manual for state mental health planning, a review of the operation of a local court clinic, a protocol for studying house staff behavior in ordering laboratory tests, and a patient satisfaction questionnaire. In the future, these reports will focus on analysis of a specific problem within the substantive health area in which the student is specializing. A list of preceptors for the 1977-78 Applied Research Seminar appears in Appendix G.

As mentioned in the section on "Faculty" above, preceptors for student field work who have shown outstanding commitment to the program have been granted academic appointments in the Department of Health Services, beginning with the summer of 1976. This establishment of a formal clinical faculty has served both to recognize and to strengthen the program's commitment to extramural education for its students.

Both the summer internship program and the Applied Research Seminar were developed with assistance from the Office of Extramural Health Programs, as mentioned earlier. Established in the fall of 1973 with funds from this contract, the Office was charged with developing operating relationships with components of the health system, including governmental agencies, providers of health services, and organizations of consumers. A principal objective of the Office was seen to be provision of training positions for students and research opportunities for faculty in the operating health agencies and organizations. It was also hoped that the advice and assistance given by the Office to the community might eventually help promote desired changes in the health care system.

Under the direction of Dr. H. Richard Nesson, former Medical Director of the Harvard Community Health Plan, the Office's activities rapidly evolved into an unusual combination of technical assistance, education, and research. Some idea of the wide range of technical assistance projects conducted by the Office may be gained from the following highly selected list: (1) a nursing home study designed to improve the quality of care in skilled nursing facilities; (2) a review of the current functions and possible future directions of the Worcester Department of Public Health; (3) development of a planning program for a neighborhood health center; (4) an evaluation of rural primary care centers; and (5) technical assistance for the development of hospital-based group practice programs. Relationships with outside agencies and institutions developed through these and other projects have proven valuable in identifying preceptor organizations for the HPM internships and Applied Research Seminar, and have also been a source of material for new teaching cases. In addition to providing assistance in the development of the HPM field work program, members of the Office of Extramural Health Programs have also developed and taught a number of new didactic courses, both for the HPM program and for the Harvard Primary Care Residency Program.

Many of the Office's technical assistance activities have focused on ambulatory care, partly because of the interests of Dr. Nesson and other members of the staff. This emphasis recently led to the establishment of a unique relationship between the School and the Division of General Medicine and Primary Care of the Peter Bent Brigham Hospital (PBBH), in which the Director of the Office has assumed full administrative and clinical responsibility for an ambulatory delivery setting. This responsibility has occupied much of the Office's attention during the past two years.

The Division of General Medicine and Primary Care of PBBH was established on January 1, 1976, its goals being to evaluate and develop the service delivery, training programs, and research activities in primary care. Students in the HPM program have been involved in some of the Division's planning, development, and data collection activities, and have done studies on such topics as emergency admissions and a methodology to control inpatient ancillary use. A new Primary Care Center opened on July 1, 1977, and the development of expanded training programs is proceeding, for primary care and internal medicine residents, nurse practitioners, medical students, and health administration students. Through cooperative efforts with the HPM program, students in that program will be provided with practical experience in ambulatory health care

administration; some HPM students have already gained such experience through work done as part of the Applied Research Seminar. In addition to providing opportunities for education and research with real world complexities, the Office's involvement with the Division of General Medicine and Primary Care is thus encouraging the education of all members of the health care team in one setting.

We believe that the field work component of the Health Policy and Management Program has been one of its most successful aspects. In addition to providing students with experience in problem solving in the kinds of settings in which they will eventually function, the field work program has increased the School's ties to the community and provided practicing health care executives with a new source of technical assistance and professional stimulation. Members of the clinical faculty have been a valuable source of leads for potential permanent job placements for graduates, and have begun to act as informal "recruiters" of well-qualified applicants to the program. In the future, we intend to continue efforts to develop an even wider range of pertinent, high-quality field work placements and to supplement the current group of clinical faculty with other professionals in the health field who understand and appreciate the value of the internship experience.

Job Placement and Program Graduates

One of the primary tests of the success of a teaching program must be the success of its graduates in finding satisfying jobs which they are well equipped to perform by virtue of the knowledge and skills they have acquired. Recognizing this, we have worked to develop effective job placement mechanisms for graduates of the HPM program, and have begun to monitor their placement and performance after they leave the School. On the basis of the limited amount of information available thus far, the program seems to have been successful in providing its students with marketable skills that will enable them to fill a variety of roles in the health services system. Out of the seventy program graduates, fifty-eight have obtained positions that utilize their training, nine are pursuing further graduate work, and three have chosen to take positions outside the health care field.

The process of placing each class of students in desirable positions has begun early in the academic year prior to their graduation, when the program administration has met individually with students to discuss their career goals and employment objectives. Members of the academic and clinical faculties have provided assistance in identifying potential jobs within the health field, and a network of contacts has been established with potential employers throughout the country and with the professionals attending the continuing education programs at the School. Students have often developed other useful contacts through their field work, which has been designed to be closely related to their ultimate career objectives.

Alumni are recognized as another important resource, both for developing field experiences and for providing information about employment opportunities. The program is strengthening its alumni network in an effort to keep present

students informed of possible job placements and new opportunities in the health care sectors in which alumni are employed. We hope that this will enable us to stimulate a wider range of job opportunities for program graduates, in terms of the variety of positions available and their geographic locations. An Alumni Seminar Series has also been developed, in which alumni of the HPM program return to the School to discuss with current students their experiences job hunting and working in their chosen areas of expertise.

Our job placement efforts on behalf of the HPM students have attracted the interest of other students at the School and helped prompt the creation of a new School-wide placement office. The HPM program is now working closely with this office to develop mechanisms for informing students not only about specific job openings but also about the various kinds of career paths they might pursue. A Career Resource Center has been developed for this purpose; it provides samples of position descriptions from various employers and specialty areas, career planning information, and career seminars. These resources have proven helpful to students in planning their field experiences also. Finally, the growing number of health professionals who have been through the School's Executive Programs constitutes another extremely promising source of job opportunities and ideas for graduates of the School's degree programs.

The following is a relatively comprehensive list of the kinds of positions we feel graduates of the HPM program are prepared to assume:

- Planners and analysts in the Department of Health, Education, and Welfare, the Environmental Protection Agency, and other federal health-related regulatory agencies.

- Planners and analysts in such state and local agencies as departments of health, mental health, and hospitals, Medicaid offices, comprehensive health planning (and their successor bodies), Certificate of Need offices, and rate-setting commissions.

- Health analysts for legislators and congressional committees with health care responsibilities.

- Analysts for health insurance firms (private and Blue Cross/ Blue Shield), consulting firms, consumer interest groups, scientific bodies, foundations, and health-related industrial firms.

- Administrators of health service programs, both public and private, at national, state, and local levels.

- Administrators in health care institutions, such as hospitals, chronic care facilities, prepaid group practices, and neighborhood health centers.

The Class of 1976 provided the first real opportunity to assess the program's success in preparing students for these kinds of positions. Thirty-three

students received the degree of Master of Science in Health Policy and Management in June of that year. Of these, five went on to pursue advanced degree programs either in public health or in medicine. Twenty-six graduates accepted job offers in the health care field, and two chose to take job placements outside the field of public health.

In June of 1977, seventeen students graduated from the program. Three of these went on to pursue advanced degrees in law or medicine, thirteen were placed in positions in the health care field, and one found employment in a non-health-related agency. Types of job placements program graduates have secured include: director of a community hospital, consultant in a management consulting firm, planner in HEW, director of finance and development in a large group practice, planner in a Blue Cross plan, health educator in a community hospital, director of support services in a regional hospital overseas, nutrition educator in a school system, and analyst in a state regulatory agency. A list of the job placements of the Class of 1977 is included in Appendix H.

In the future, we intend to monitor closely the accomplishments and career paths of program graduates, to seek feedback from them concerning the usefulness of various parts of their training, and to modify the curriculum accordingly. Considering the newness of the HPM program, our success to date in placing graduates in desirable positions augurs well for the future of the program, and would seem to indicate that there is indeed a substantial need for people trained in health policy and management, as the Panel on Health Services suggested five years ago.

Conclusions

Despite the changes that have occurred in the HPM program since it was first offered in 1973-74, it has continued to be modeled fairly closely on the recommendations of the Panel on Health Services. The program's goal is still to respond to the principal need seen by that panel, for people who are knowledgeable in areas related to health and in the management and analytic sciences. We believe the program's graduates are well equipped to face the challenges that will be presented by the health care system of the future, as seen by the panel: they have the knowledge and experience to be flexible in the face of rapid change, the skills needed to plan for the most effective use of limited resources and to implement such plans, and the ability to function in an interdisciplinary environment.

Although our experience with the HPM program has led us to modify some of the specific approaches suggested by the Panel on Health Services, in few cases have we departed radically from the panel's recommendations. Despite the difficulties inherent in cooperative efforts that draw together people from disparate backgrounds, we continue to believe that it is important to involve in training in health policy and management faculty from a variety of academic disciplines and from the "real world" of operating health care organizations. In general, we have found a very encouraging level of interest in health problems among people from disciplines not traditionally concerned with health. Likewise, we continue to share the panel's view that the M.D. degree is not necessary for

careers in health policy and management. We have found, however, that it is important for entering students to have quantitative/analytic skills and desirable for them to have some familiarity with the health system, through a combination of outstanding undergraduate work and either work experience in the health care field or prior graduate work.

With respect to the program itself, we have worked toward achieving a desirable balance between rigorous, appropriate academic training and field experience where the learned concepts and skills are applied. One of the program's primary strengths is that the curriculum was designed as an integrated academic experience from the start, and has been carefully evaluated by faculty, students, and others at regular intervals. While these evaluations have reinforced our confidence in the core requirements of the program, we now allow students more flexibility in how they meet these requirements. A need for more extensive teaching in a number of areas -- management skills as applied to health, application courses in health planning, and so on -- was also identified, and many new courses were developed to meet this need. In addition to courses at the School of Public Health, extensive use has been made of the offerings in other parts of the University, especially in the program's second year, through student cross-registration. It should be noted that our ability to draw on the great resources of Harvard University has played an important role in the rapid development of the HPM program; it would be considerably more difficult to institute a similar program in a school that did not have access to such resources.

As recommended by the Panel on Health Services, the HPM program has laid much emphasis on the provision of opportunities for students to work on "real" problems. This has been done in several different ways, the most important being the two field experiences that have formed a required part of the program -- the summer internship and the second-year Applied Research Seminar. Many of the program's formal courses also give students practice in solving "real" problems, through case studies and other "experiential" approaches. Considerable effort has gone into the development of teaching materials with a health services orientation for such courses, and these outlines, teaching notes, cases, and so on could be easily shared with other schools. We believe the program's emphasis on field work and other forms of "experiential education" has been one of its most successful aspects.

An innovative faculty, a well-prepared student body, and a carefully thought out curriculum are of little use if there is no demand for the graduates of a program, or if they do not have the skills they need for their chosen careers. Because of the newness of the HPM program, we have had limited opportunity to assess the market for its graduates, and even less to judge the appropriateness of their training. However, those who have graduated so far have rapidly found desirable positions for which their training seems highly relevant. We intend to monitor the achievements and career paths of our graduates carefully in the future and to make any modifications necessary to maintain the program's responsiveness to societal needs.

As mentioned earlier in this report, we intended the HPM program to serve as an experiment in the revision and reorientation of the School's curricula. We hoped to develop strong new programs in the health policy and management area that could provide models for approaching other areas. Before a program

can serve as a model, however, it must win acceptance from those who are to use it as one. Although the HPM program is now generally acknowledged to be a success, it was not immediately accepted by all members of the faculty, and there were many who questioned its approaches. One understandable source of their questions was the program's departure from the kind of education public health practitioners traditionally received, which -- at this School, at least -- built heavily on prior training in the biomedical sciences and emphasized additional education in the natural sciences relevant to the health problems of populations and disease prevention. A further source of potential misunderstanding was the (necessary) presence within schools of public health of both natural and social scientists. Some natural scientists tend to be dubious about the value of training in "soft" areas like management science, especially if this is not rigorously structured, and if it is a major emphasis, rather than one important element in a broadly based program. The HPM program's reliance on collaboration with other Harvard faculties also contributed to questions about its appropriateness within a school of public health -- again, particularly among the natural scientists.

Our experience with the HPM program has led to a wider acceptance of the basic ideas behind its creation -- that the health care system needs policy analysts, planners, and managers sophisticated in health and in the analytic and management sciences, that these people do not need to be physicians, that their training should draw upon all relevant disciplines, and that schools of public health should take the lead in bringing together the resources of the university to provide such training. While it would not be accurate to say that every member of the School's faculty now shares this philosophy, the doubts expressed by some during the HPM program's early years have been alleviated to a great extent by increased familiarity with the program, its students, faculty, and graduates. By a variety of criteria -- the high application-to-admission ratio, the quality of the students, the coherence of the curriculum, and the ability of the graduates to find desirable jobs -- the program must be judged a success, and this is generally recognized.

Most faculty now feel that the HPM program is strong enough and firmly enough established to begin to serve as a model for aspects of the revision of other programs. This is happening to a significant extent already, and we plan to pursue this approach further in the future. We also plan to extend training in health policy and management to other areas, such as environmental health and nutrition, and to give additional consideration to the HPM program's place in the School and the University. The relation of the HPM program to other programs is discussed in the next section, and to some extent, in those that follow it. We anticipate that the planned extension of training in health policy and management and increased cooperation with other programs will lead to greater familiarity with the HPM program on the part of faculty in other areas and will help to resolve any remaining difficulties in gaining acceptance for the program's new approach to public health education.

Relation to Other Programs

During the past five years, the Health Policy and Management Program has evolved into one of the major programs in the School, as measured by the number of student-years of training now being provided. Partly in recognition of this fact, we have begun to give increased attention to the program's relation to other programs within the School and the University. In this section, we will discuss briefly the program's place in the School in an organizational or administrative sense, and its relation to research and midcareer activities in the area of health policy and management. We will then report on plans to extend training in health policy and management to other areas and on ways in which the HPM program is serving as a model for the revision of other programs.

As mentioned earlier, the HPM program was originally an interdepartmental program with a wholly independent administration. Since the fall of 1975, when it was combined with the two-year master's program in health services administration, it has been technically under the jurisdiction of the Department of Health Services, a new department created by the amalgamation of the former Departments of Health Services Administration and Maternal and Child Health. Most of the HPM faculty have had appointments in this department; many, but by no means all, of the program's courses have "Health Services" numbers; and the program's budget is handled through this department. However, the HPM program has continued to be administered very independently within this framework: it has its own director and staff, and decisions about the curriculum, admission of students, and so on are made by the program faculty and administration.

The current administrative arrangement is thus basically a "matrix" form of organization. Indeed, when the Department of Health Services was created in 1975, a deliberate effort was made to reorganize the department in a matrix format not only with the HPM program, but with other related new activities, many of which were initiated under this contract and are discussed later in this report. These include the Executive Programs in Health Policy and Management (EPHPM), the Center for the Analysis of Health Practices (CAHP), the Office of Extramural Health Programs, and the Office of International Health Programs.

While it seems to us that the matrix format has many advantages over strictly disciplinary departments or strictly problem-oriented task groups, it also has its problems. For instance, much effort must be devoted to maintaining lines of communication, to avoid duplication of effort and to maximize the sharing of resources. In the future we plan to explore further the usefulness of this form of organization. Particular attention will have to be given to organizational arrangements if training in health policy and management is extended to other areas, as discussed below.

Through the matrix arrangement and in other ways, an effort has been made to coordinate the HPM program as much as possible with other activities related to health policy and management and other aspects of health services. Thus, many faculty have taught in both the HPM program and the midcareer program, Executive Programs in Health Policy and Management. Case studies have been shared between the programs, and participants in EPHPM courses have provided leads concerning job openings for HPM graduates and possible field placements.

Similarly, research done by members of the Center for the Analysis of Health Practices has provided material for cases for the HPM program, and HPM students have occasionally participated in the Center's projects. We plan to continue and strengthen these and other collaborative efforts in the future. One step in this direction will be taken in the near future, when the HPM program and the Executive Programs will begin to report to a single director.

Although arrangements facilitating cooperation between the HPM program and other activities in the health services area are well established, less has been done to integrate the program with activities in substantive health problem areas like nutrition, environmental health, and population sciences. Judging from the panel discussions, there is a need in each of these areas, parallel to that in the health services area, for people who combine knowledge of health with knowledge of the management and analytic sciences. Although we have planned to develop training programs to meet this need for some time, either by extending the HPM program or by some other means, our efforts thus far have been mostly on an informal basis. The Departments of Nutrition and Environmental Health Sciences have admitted some students with policy and management interests, and second-year HPM students have had the option of focusing on the planning and administrative aspects of a substantive health problem area. However, partly because of personnel and funding constraints, and partly because we have wanted to concentrate on putting the HPM program on a sound footing, we have not yet developed more formal, integrated programs or tracks in different areas. The HPM program now seems well enough established to allow us to focus on this task. We have already begun to develop an integrated program with the Department of Nutrition, and plan to develop tracks in environmental health, population sciences, and international health also, as well as a track for medical students.

Toward the beginning of the contract, one or more panels were held in all these areas. A number of new activities were initiated in response to the recommendations of these panels, some related to the area of health policy and management and some in other areas. Because these activities will form the background for any new efforts, they will be described briefly here. It was mentioned previously that recommendations of the Panel on the Environment and Health were given considerable weight in developing the HPM program. Other activities in this area have included the development of several midcareer courses through EPHPM (described in more detail in a later section) and the initiation of a new research program in environmental mutagenesis. Two other new efforts are just getting under way: (1) a set of expanded programs in occupational health, and (2) Interdisciplinary Programs in Health (IPH), an effort involving postdoctoral fellows and visiting scholars that is designed to enlist experts from the natural and social sciences to focus attention on public health problems of importance, beginning with environmental health issues.

Fairly early in the contract, a new Office of International Health Programs was established at the School, under the direction of Dr. Stephen C. Joseph, to coordinate further development of teaching and research programs in this area. Its activities have included a study of international students at the School, the development of several new courses and international case studies, and con-

sultation activities and development of opportunities for field projects in various countries, partly in collaboration with the University-wide Harvard Institute for International Development. The Office has devoted considerable attention to the preparation of a detailed proposal for a major new midcareer program in health policy and management in developing countries. Sources of additional funding must be identified before this proposal can be implemented and further progress made toward an integrated set of programs in international health at the School.

Relatively few activities have been initiated in response to recommendations of the Panel on Nutrition and the Population Review Panel, partly because of funding difficulties and problems in identifying people to take charge of new efforts. The Department of Nutrition is currently engaged in a serious review of its future directions. One new development has been the recruitment of Dr. C. Peter Timmer, who came to the School in March, 1977, and has initiated a program directed toward understanding the nutritional impact of governmental policies, domestically and internationally. Several new faculty members have joined the School in the population area, and have undertaken a variety of new activities.

In developing integrated programs dealing with the health policy and management aspects of environmental health, nutrition, population, and international health, we intend to draw as much as possible on the related work that has already been done in these areas. We anticipate developing tracks within the HPM program rather than wholly separate programs in each area. This may necessitate modifying the core curriculum or adding new core courses to meet special needs. More advanced second-year courses and new case materials in the various substantive areas will need to be developed, and the most useful course offerings elsewhere in the University will need to be identified. Cooperative admissions arrangements with the relevant departments will also have to be made.

The eventual result of these efforts might be a set of School- or University-wide programs in health policy and management. Students would have the option of majoring in health policy or management and "tracking" in a substantive health area. For some students, the reverse might also be appropriate. These programs would be integrated with midcareer training efforts and with relevant research programs. We also anticipate extending training in health policy and management to new audiences, such as medical students and non-health students (undergraduates, law students, etc.). As a first step in this direction, planning has begun for a track for medical students within the HPM program.

The HPM program is having a significant effect on other programs in the School not only because of plans to develop tracks in new areas, but also because aspects of the program are beginning to serve as models for the revision of other programs. This has occurred spontaneously to some degree, and we intend to encourage this approach in the future. For a number of reasons, the past few years have been a time when the School of Public Health has been in need of models. As stressed by the panels, the health care system is in a period of rapid change, and the needs and problems in public health have been

changing at a correspondingly rapid pace. The School is in the process of reorienting its programs to meet these needs, but much of this reorientation has occurred in a relatively haphazard fashion. In addition, the School has virtually doubled in size in the past seven years, the complexion of the student body has changed considerably, and the number and variety of programs offered have increased.

Concurrently with this period of growth and change, many efforts have been made to review the School's programs and goals, of which the panels and other activities conducted under this contract have formed only one. Other such reviews have included a self-study carried out in connection with an accreditation review for the Council on Education for Public Health; deliberations of a series of committees on the Master of Public Health program; and program surveys and reviews conducted by the Educational Policy Committee and the Advisory Committee on Planning, two of the School's standing faculty committees. In addition, partly in response to recommendations emerging from the accreditation self-study, a new position, Associate Dean of Academic Affairs, was created at the School. Both individuals who have held this position -- Dr. Joseph Brain and Dr. Brian MacMahon -- have undertaken further study of the School's programs. Finally, Mr. Michael Farmer, recently appointed as Associate Dean for Policy and Resources, has worked with the Advisory Committee on Planning and independently to review many of the School's activities, including the directions being taken by its academic programs.

In the midst of these reviews, it is helpful to be able to refer to a program like the HPM program, which has an integrated curriculum developed "from scratch" in an area where there is a clear need for trained people. In addition to the coherence and focus of the curriculum, we believe other aspects of the program are also worthy of emulation. For instance, it is obvious that other programs would benefit from careful and repeated evaluation by students, faculty, and people outside the School, like that carried out with respect to the HPM program. Various groups are considering ways to encourage the continuation of such evaluation where it is already being done and its introduction in areas where it is not. As one step in this direction, a School-wide student course evaluation system has been implemented. Likewise, the HPM program has found a vigorous placement and career counseling effort essential. The program's needs in this regard have helped to prompt the creation of a School-wide placement office that is providing assistance to students in other programs as well. Finally, the HPM program's emphasis on field work and the case analysis approach is beginning to influence other programs to develop similar components.

During the past several years, an unusual amount of attention and energy has gone into review of the Master of Public Health program, including its relation to the HPM program. Although the two programs have much in common, and at least in some cases are training people for similar jobs, they differ greatly in many ways. In contrast to the HPM program, the MPH program is the oldest and most traditional in the School. The current curriculum is very loosely structured and consists mainly of minimal distribution requirements of survey courses. This lack of definition and depth is the result of a deliberate choice made a number of years ago, but many faculty members are now beginning to feel that the program has become too vague. The current program has no provision for

field work, and little attention is given to job placement, partly because MPH program graduates in the past, many of whom were physicians, rarely had difficulty finding employment.

Although dissatisfaction with the current MPH program is widespread, there has been great division of opinion within the faculty concerning how to remedy the situation. Issues that have occasioned particularly deep disagreement include the following: Should the program be one academic year in length, or could it be longer? Should admission continue to be limited largely to persons with relevant prior doctoral degrees? Should the program be mostly departmentally based as at present, or should it be a School-wide program coordinated by a School-wide committee? Should the curriculum be structured, with at least some required courses, or should it continue to allow students virtually unlimited freedom of choice? Should training in policy and management be given a heavy emphasis, or should the program continue to be "general," with equal emphasis in various public health areas?

Although most of these issues remain unresolved, we believe that considerable progress is being made toward their resolution, and we expect the lessons we have learned from the HPM program to be useful in this respect. One step forward was the creation, by faculty vote, of a standing MPH program committee in the summer of 1976. This committee was restructured last summer to include three coordinators and an advisory body representing departments and other units of the School. The program committee has responsibility for supervising the current MPH program and developing proposals for its revision in the future. The committee has made substantial progress in the latter area during the past six months. The kind of approach they are considering has many similarities to the HPM program, but with more emphasis on breadth of training in different public health areas. These ideas concerning possible revision of the MPH curriculum are still in a highly tentative stage, and undoubtedly will undergo many changes before any definitive steps are taken. It is apparent, as well, that careful consideration will have to be given to the relation between the MPH program of the future and the HPM program. One possibility currently being considered is the partial amalgamation of the HPM program with the MPH program for concentrators in the Department of Health Services, since the needs of these two groups are particularly similar.

The remaining sections of this report will clarify further the relationship of the HPM program to other activities in the School. They will discuss various other efforts related to the health services area first, and then three new undertakings that complement the HPM program: Executive Programs in Health Policy and Management, the Center for the Analysis of Health Practices, and the Office of Health Policy Information.

IV. RELATED EFFORTS

Other Activities in the Health Services Area

As mentioned earlier, in 1975 the School's Departments of Health Services Administration and Maternal and Child Health were combined to form the new Department of Health Services, under the direction of Dr. Robert J. Haggerty. Since that time, a third department, the Department of Behavioral Sciences, has also been functioning for administrative purposes within the Department of Health Services. Although this reorganization was instituted partly because of financial constraints, it also represented one step toward the kind of consolidation of activities recommended by the Panel on Health Services. Our experience with this arrangement has reinforced our original feeling that the School should have a separate Department of Behavioral Sciences, and we intend to reinstate this department as an independent entity. However, we have also concluded that consolidation of activities in health services administration and maternal and child health has advantages as a permanent arrangement -- an arrangement that would probably work well in other schools of public health also.

This consolidation of effort in the health services area was carried further through the development of a matrix organization involving the Department of Health Services, the HPM program, and other units within the School (as reported in the preceding section). Other early activities of the Department included a review of its programs and consideration of its relation to other parts of the University and the community. Out of this kind of self-study has gradually emerged a view of the Department's core mission as improvement of health services in the United States, through development of demonstration and research projects that could serve as models for changing the health care system, and education of providers and managers who will assume key positions where they can initiate such projects. At the same time there may be a need to separate programs that emphasize content of services from those that emphasize management and policy.

This view of the Department's mission is based on a belief that schools of public health should engage in direct community activities. We see such activities not only as a way to ensure the relevance of our programs to societal needs, but also as a way to begin developing the School's own "clinical track" of faculty and students who are engaged in providing services in community programs. This kind of community involvement requires a new type of faculty and a new type of organization for schools of public health. The creation of the HPM program's clinical faculty, the program's emphasis on field work, and the activities of the Office of Extramural Health Programs are some of the steps we have taken in this direction.

The Department of Health Services is pursuing several other innovative projects designed to increase involvement with the community. The major effort thus far has been the development of CHIPs -- Collaborative Health Improvement Programs -- a project funded for its initial stages by the Kellogg Foundation.

The project is directed toward developing a collaborative relationship with three communities with the goal of improving health services. This will generally involve several steps: establishing relationships with community leaders; conducting a "diagnosis" of the community's health needs; carrying out demonstration projects; evaluating their effectiveness; and determining the applicability of such services in other communities. The long-range goals of the project are to develop analogs of the teaching hospital for the School of Public Health, and to provide viable demonstration models for implementation at the national level.

Other projects involving interaction with the community include a multiplicity evaluation of child health services being supported by the Mott Foundation and several collaborative undertakings with the Harvard teaching hospitals, such as a series of community programs developed with the Children's Hospital to provide health services for city schools and for homes for youthful offenders. The Department of Health Services plans to develop additional "demonstration projects" in a variety of other areas, including health education of the public, programs to integrate mental and physical health services, and quality assurance.

In addition to efforts to increase interaction with the community, two new organizational structures have been created that will involve the School much more intimately than in the past with the Harvard Medical School and teaching hospitals. The first is a new Division of Primary Care and Family Medicine, which, though it is a unit within the Medical School, will utilize resources of the School of Public Health in developing educational and research programs in primary care. The second new structure is the Division of Preventive and Social Medicine, a joint division of both schools. The clinical aspects of the Division's activities will be carried out in the clinical departments, and major contributions to the formal educational and research aspects will be made by the School of Public Health.

We anticipate that these new structures will greatly facilitate the teaching to medical students of various aspects of public health, such as epidemiology, health policy and management, and environmental and occupational health. Many of the panels held under this contract emphasized that changes in the health care system are making it increasingly important for physicians to understand the value of a preventive, population-oriented approach to health problems. We have taken some steps already to help meet the resulting need to provide medical students with a grounding in public health, and we intend to expand these efforts in the future.

Along with the activities described above, the Department of Health Services is working toward the development of new programs dealing with three specific areas: services for the handicapped, public health nursing, and aging and long-term care. To launch the examination of these areas, an expert panel was held in each, with funds from this contract. These meetings included the Panel on Services for Handicapped Children (June 2-4, 1976); the Panel on Public Health Nursing (June 13-15, 1976); and the Panel on Long-Term Care and Aging (September 15-16, 1976). Major recommendations of these panels were:

(1) that the School develop a program relating to services for the handicapped; (2) that the School consider providing training in policy and management for public health nurses in its doctoral and executive programs; and (3) that the School recruit additional faculty members committed to the study of geriatrics and long-term care.

New activities related to the area of the handicapped have included the evaluation of child health programs mentioned earlier, organization of a faculty seminar, and planning for a study of the effectiveness of health advocacy programs now in operation. In the area of nursing, Executive Programs in Health Policy and Management has designed a midcareer program to teach senior nurses to manage multidisciplinary primary care units.

A major new effort in the area of long-term care and aging is the development of a Division of Geriatrics within the Department of Health Services, made possible by a grant from the Office of Human Development at HEW. A principal emphasis of this project is the preparation of cases and position papers on specific problems of health care for the elderly. Development of a more effective primary care program for residents in long-term care and geriatric facilities will form part of the "CHIP" programs described above, and funds are being sought to initiate other efforts related to geriatrics.

As mentioned earlier, since 1975 the Department of Behavioral Sciences has been functioning for administrative purposes within the larger Department of Health Services, largely because of the limitations of the School's resources in the behavioral science area. These limitations have been one of the motivating factors behind the development of a number of joint efforts with other parts of the University - a course we have chosen to follow for positive reasons as well. Among these collaborative activities have been the following: (1) a program to train psychiatric residents for administrative roles in mental health settings or in psychiatric epidemiology; (2) the appointment of two psychiatrists from the Harvard teaching hospitals as visiting lecturers in the Department of Behavioral Sciences; (3) a research project on the effects of stress and social support networks on the use of health services.

Although we intend to continue these efforts to utilize fully the resources of the University, we also believe that the Department of Behavioral Sciences will be unable to accomplish its varied and important goals unless it is reestablished as an autonomous unit. Many of the activities conducted under this contract, from the discussions held by the Panel on Mental Health and other panels to the efforts of Dr. Beatrix Hamburg, the coordinator of planning in this area, have served to underline the importance of the behavioral sciences in virtually all public health areas, and the significance of behavioral and social factors in physical illness. In recognition of the importance of this area, a search for a permanent chairperson of the Department of Behavioral Sciences has been initiated, and we are taking other steps to enable us to reestablish the Department as an independent unit and to expand its scope in the future.

Executive Programs in Health Policy and Management

Executive Programs in Health Policy and Management (EPHPM), the School's major new midcareer effort, grew out of a conclusion reached during the development of the Graduate Program in Health Policy and Management that educational efforts directed at middle- and senior-level health professionals would be required to achieve maximal impact on the changing health system. Under a separate contract with the Bureau of Health Resources Development (N01-44105), members of the Executive Programs staff have been working since July, 1974 to develop continuing education programs for health professionals, utilizing the resources of the Radcliffe Institute, the Harvard Business School, the Medical School, and the Kennedy School of Government as well as those of the School of Public Health.

The original director of EPHPM was Mr. Gordon Chase, who was succeeded in this post in March 1977 by Dr. Marc Roberts, the current director. Under the direction of Mr. Chase, early activities of EPHPM included development of a project plan; interviews with health care professionals and government officials concerning continuing education needs; a review of previous surveys of such needs; and the preparation of a series of notebooks presenting an overview of the operations and problems of important health care sectors.

Rapid progress was made in the development and offering of courses. Two types of programs have been designed: major programs of three to six weeks in length that address in some depth the issues, problems, and resources in the area being considered; and short programs lasting one or two weeks that provide more focused study of selected topics. Courses cover both the management of health care systems and institutions, and the policy aspects of planning and regulating health and environmental services. Most programs are offered for experienced professionals in senior positions of responsibility in their organizations. Some programs are being developed for middle-level managers who are likely to assume general management responsibilities. Participants include both those who manage health care delivery systems and institutions, and those who regulate health care and environmental quality in the areas of policy, planning, legislation, evaluation, and finance.

Six programs have been offered thus far in the management area. The Program for Health Systems Management is a major six-week program in which senior-level health managers intensively study significant management problems facing health delivery and health-related institutions. This program has been given each summer since 1972, originally under the auspices of the Harvard Business School. A second major program in the management area, the Management Development Program in Health, is offered in two three-week segments for middle-level managers. It is designed to provide those with experience in departmental areas with a wider range of managerial skills in institutional policy, resource allocation, and leadership style, to prepare them for leadership roles in health care.

Three short programs in the management area are the Program for Financial Management and Strategy in Health, the Program for Clinical Chiefs of Service, and Managing Multi-Institutional Collaboration. The first of these is an in-

tensive six-day program that considers important elements in the financial management process, explores alternatives for health financial managers, and studies the effect of public policy decisions on the financial management of health care institutions. The second is a two-week program dealing with the management problems and opportunities faced by the chiefs of major hospital services, such as medicine and surgery. The third short management program, Managing Multi-Institutional Collaboration, is directed toward executives engaged in creating and managing interinstitutional processes, and is designed to identify the issues involved in this activity. The program, which is six days in length, includes sessions on the use of data to determine the costs and benefits of collaboration, the use of decision-making models for multi-institutional systems, and problems of and perspectives on negotiating collaborative management.

The last program in the management area is "Management Skills for Professional Nurses," the midcareer course for senior nurses mentioned in the preceding section of this report. This program is open to nurses in significant management positions in private and public health care organizations. Offered weekly over an extended period to nurses in the Boston area, it considers principles of health management, program planning and budgeting, and program implementation.

Three EPHPM programs have been developed and offered thus far in the policy area. These include two major programs, the Program in Health Policy, Planning, and Regulation, and the Program in Environmental Policy and Management. The first is a four-week program designed to enhance the skills and broaden the perspectives of senior health professionals in the areas of policy, planning, and regulation. The program is structured to develop new analytic skills, review major current issues in health, and analyze critical administrative and policy-making processes and problems. The Program in Environmental Policy and Management is offered for three weeks to senior-level officials of federal, state, and local environmental protection agencies, as well as key representatives of private industry and of consumer groups. In addition to policy analysis and management skills, the program covers issues of environmental science and law and discusses the economic and political settings of environmental law and regulation.

Participants in the Program for Occupational Health, the one short program that has been offered in the policy area thus far, include federal and state OSHA officials and labor union representatives. The program covers disease and control, law and standards, and economics and decision making, while considering the policy and administrative implications of current standards and practices in the field of occupational health.

In addition to the programs listed above, a four-day Program for Hospital Trustees is also offered. Currently in the development stage are two other programs dealing with health planning and with quality assurance.

As with many courses developed for the Graduate Program in Health Policy and Management, the EPHPM programs rely heavily on the case method. The use of

"interactive" teaching methods, such as case analysis, preparation and presentation of individual reports by participants, and discussion of actual problems facing participants in their jobs, is particularly important when the 'students" in a course are experienced and knowledgeable professionals who have developed their own approach to problems. All EPHPM courses have been subjected to careful evaluation by participants and others at the end of each iteration. As judged by these evaluations, the programs are regarded very highly by their participants; for instance, the Program for Financial Management and Strategy in Health was given an overall rating of 4.8 out of a possible 5.0. In many cases, programs have been revised in accordance with participants' suggestions.

In addition to course development and offering, EPHPM has also undertaken to encourage the use of continuing education by serving as a kind of "broker" in this area. As part of this effort, Radcliffe Institute Programs in Health Care, under subcontract to EPHPM, conducted a nationwide survey of continuing education in the areas of health management, policy, planning, and regulation. Of the 3,810 respondents to the survey, 1,542 (40.5%) offered continuing education courses in health, but only 82 (0.05%) offered courses in the specific areas of health management, policy, planning, and regulation. Radcliffe Institute has also developed a catalog of several hundred continuing education courses in health management and regulation across the country -- Resources for Continuing Education in Health Care -- along with an informational newsletter called Resources.

Our experience to date with continuing education programs for health executives has provided us with important lessons in recruiting, scheduling, teaching, and curriculum design. Some of our conclusions about these areas are summarized in the following paragraphs.

One of our observations concerning recruiting is that financial constraints continue to pose problems for many potential participants in EPHPM courses. State health departments and municipal agencies in particular find it difficult, if not impossible, to expend scarce resources on executive education for their staff. It may well take specific encouragement by HEW, or even earmarked transfers of federal funds, to overcome the notion that such training is a dispensable luxury in tight budget times.

Variations in scheduling may be essential for longer programs. Many participants who could attend the two three-week sessions of the Management Development Program in Health would have been unable to be away from their jobs for one six-week block. In addition, the success of the short (four-day) Program for Hospital Trustees suggests that additional short programs can attract those who cannot commit themselves to longer periods of time and could serve to introduce executive education to groups who, after some exposure, may be more willing to find longer periods of time for it.

With respect to teaching, the senior level and heterogeneous backgrounds of participants make tremendous demands on faculty members. A substantial allocation of ongoing research time must be made to enable faculty members to respond to the needs of a wide spectrum of participants and to extend the participants' frames of reference. In addition, pedagogical issues are prob-

ably as important as substantive issues when working with an executive audience. Such participants are extremely sensitive to being lectured at; moreover, their own contributions to the class are extensive. Faculty members must engage the interest of individual participants and capitalize on their experiences as a group, while still structuring class discussion and "sticking to the point." Interactive teaching is a skill which takes time to develop, and additional resources will probably have to be devoted to helping faculty develop their teaching skills in institutions that wish to start their own executive programs.

Similar problems apply in the area of course development. Our program for hospital service chiefs, for example, has underlined the necessity of consulting practitioners in the field while at the same time not necessarily accepting the views of "experts" who may be too close to a situation to see problems in their full context.

Under the contract that funds EPHPM, as under the contract being discussed in this report, reproducibility of courses and, in general, ways to make our experiences useful to other institutions are central concerns. One obvious moral to be drawn from our experience with Executive Programs is that written materials are by no means self-implementing. While experienced faculty can, no doubt, make good use of such materials on their own, especially when there are also extensive teaching notes, personal contact with experienced teachers and the executive teaching process itself is very helpful. We have found it important to work with new members of our own teaching teams in a systematic way, providing them special guidance and support at the beginning. Clearly, a faculty chairperson of a new program, and the key administrative personnel, would benefit greatly by walking through a functioning program's process of planning, marketing, admissions, administration, and pedagogy.

The Executive Programs form an essential part of the new educational and research efforts we have developed in the area of health policy and management. Although we anticipate that students in the Graduate Program in Health Policy and Management will eventually assume key positions in which they can effect desirable change in the health care system, this will not happen in the immediate future. A midcareer program directed toward senior-level health executives who already occupy such positions is an effective way to bridge this gap. Also, as a result of conscious efforts to coordinate the HPM program with the Executive Programs, there has been much sharing of resources, from faculty and teaching materials to the assistance rendered by EPHPM participants in identifying possible field placements and permanent positions for HPM students. Indeed, our experience over the past several years indicates that an executive education program can contribute greatly to the development of effective teaching materials and a relevant research agenda. If faculty are forced to test their ideas and understanding against the perceptions of senior-level people who have experience, wisdom, and practical sophistication, we can be more confident that educational and research programs at the School will be relevant and efficacious in helping to meet the needs of society.

Center for the Analysis of Health Practices

Formally established on April 9, 1973, the Center for the Analysis of Health Practices (CAHP) represents an important complementary approach to the tasks undertaken under this contract. The Center's activities are responsive to a number of important needs seen by the panels held under the contract -- for interdisciplinary cooperation, for the application of quantitative and policy analysis to health problems, and for the development of improved methods for evaluating health practices. The program of the Center brings together physicians, economists, statisticians, sociologists, policy analysts, lawyers, engineers, and others from various parts of Harvard and outside in collaborative research dealing with the application of new technology to health care, the evaluation of medical interventions, and topics relevant to the provision of primary medical care. In addition to conducting studies in these general areas, the Center offers consultative services to outside individuals and agencies, contributes to the teaching program of the School, and is evolving methods for encouraging the translation of the results of its research into practice.

The Center's activities have been coordinated with programs developed under this contract in a variety of ways. For instance, members of the Center have served as faculty in the HPM program and in the Executive Programs; students in the HPM program and other programs of the School have participated in research projects of the Center. In addition, funds from Contract NO1-AH-34018 provided partial support for the development of new case materials for the HPM and EPHPM programs on the basis of work done by the Center. Although this contract played a crucial role in initiating development of the Center, support for most of CAHP's activities has been obtained from the private sector.

Dean Howard H. Hiatt was the original director of the Center. He was succeeded in this post in 1975 by Dr. Howard Frazier, Associate Professor of Medicine at the Harvard Medical School. Dr. Peter Braun, Associate Professor of Clinical Epidemiology at the School of Public Health, has served as the Center's clinical director. As mentioned above, members of the Center's staff have included representatives of a variety of disciplines. Many of these individuals have maintained their primary disciplinary affiliation elsewhere, as members of academic or clinical departments, or have joined the Center for a limited period of time in a visiting capacity. While the involvement of such a variety of people has been one of CAHP's major strengths, it has also necessitated careful planning to ensure that these brief stays or partial commitments are as productive as possible for both the individuals and the Center. Some of the methods CAHP has evolved for this purpose are described later in this section.

Among the first projects undertaken by the Center were an inventory of important health problems and procedures that was designed to facilitate the setting of priorities for further research, and major studies dealing with coronary artery bypass surgery and hypertension. Many other research projects have either been completed or are currently in progress. The broad range of these studies may be indicated by the following representative list of topics:

diffusion and innovation of health practices; innovation in the blood resources system; the outcome of surgical procedures; hypercholesterolemia in children; economic incentives for preventive health measures; variations in the incidence of surgery; economics of the physician market; efficacy of fetal monitoring and its impact on rates of Caesarian section; efficacy and policy implications of computerized axial tomography; deinstitutionalization of patients from mental hospitals; test-ordering behavior of physicians in ambulatory medicine; analysis of policies regarding environmental carcinogenesis; policy studies of amniocentesis; efficacy and cost-effectiveness of ambulatory EKG monitoring; determinants of hospital length of stay; costs of training for primary care; and diagnostic strategies in studies of "failure to thrive" in children.

One of the Center's objectives is broad dissemination of the methodology, results, and analyses of its research projects. Publication of these results has formed the primary vehicle for such dissemination. As of January, 1978, the Center had sponsored the publication of seven books, forty journal articles, and four chapters in books. Fifteen other journal articles have been accepted for publication. In addition, CAHP sponsors publication of a discussion paper series, and of a quarterly Newsletter distributed to more than 4,000 people in government, business, insurance, state medical and hospital associations, medical schools and universities, prepaid group plans, and HSAs. The Newsletter reports on CAHP's activities and provides a medium for interchanges among interested individuals and project investigators.

As another mechanism for disseminating the results of its activities as well as facilitating interdisciplinary cooperation, the Center has sponsored several different series of workshops or meetings. One of these is the Seminar Program in Health and Medicine (formerly the Faculty Seminar on the Analysis of Health and Medical Practices), a series of biweekly meetings that is now in its fifth year. Participants in the Seminar include individuals from local universities, hospitals and other medical facilities, and state and local government, as well as interested students. Meeting in small working groups that permit the in-depth investigation of particular topics, participants develop inter-disciplinary studies of subjects related to health care. Some of the working groups have continued to concentrate on the same topic from year to year, retaining some members and gaining new ones; other groups form around new interests and issues. The seven working groups active during 1977-78 are examining the following topics: analysis of growth data; assessment of selected diagnostic procedures; community medicine; efficacy and cost-benefit evaluation of surgical procedures; law and ethics; health accounting; and protocol of clinical trials.

Public Health Rounds, another series of meetings sponsored by the Center, have been held once or twice a month during the academic year since their initiation in 1974. These sessions have been highly successful in providing a forum for broad discussion of important health problems before an audience drawn from the School of Public Health and from the hospital, medical, and public health community in general. Some of the topics that have been discussed in these meetings are: health effects of vinyl chloride; physician manpower;

malpractice; questions relating to the epidemiology of Hodgkin's disease; public health nutrition; the British health care system and its relevance to the United States; prevention of atherosclerosis; computerized tomography; prenatal diagnosis and social policy; child abuse; and problems in setting air quality standards. Edited versions of some of the Public Health Rounds have been published in the New England Journal of Medicine.

In addition to the Seminar Program and Public Health Rounds, another series of meetings has formed the major vehicle for communication among the members of the Center themselves and their collaborators. These weekly working seminars have provided opportunities for the discussion of projects in progress, potential projects, or methodological problems. Recent topics have included sample size calculations in clinical trials, alternatives to medical malpractice litigation, blood and plasma supply, resource allocation in mild hypertension, and cost studies in a neighborhood health center. The Center has occasionally sponsored other meetings, such as a series of three one-day seminars examining federal options in health planning.

Although CAHP's activities have focused largely on research, teaching has played a part in them as well. In the spring of 1976, members of the Center presented for the first time a newly developed course dealing with decision analysis in clinical medicine, open to students at the School of Public Health and Harvard Medical School. The course was designed to enable students to analyze a clinical situation and make rational choices among alternative courses of diagnosis and treatment. A textbook on clinical decision analysis, initially developed as material for this course, is currently being prepared for publication. In addition, six members of the Center are developing a series of modules on this topic that will be presented in the summer of 1978 to two groups of house officers in the Harvard-affiliated teaching hospitals.

Along with dissemination of the results of its activities through publications, meetings, and teaching, the Center has worked to evolve relationships with decision makers in clinical, hospital, governmental, and regulatory settings, in an effort to encourage the translation of worthwhile ideas into practice. Members of the Center have served as consultants to federal and state agencies, and CAHP has come to be seen as a vital source of evaluation at many of Harvard's teaching hospitals and at the Harvard Community Health Plan. The Center has also developed collaborative relationships with other health institutions throughout the country.

One important observation that has emerged from our experience with the Center is the high level of interest in health and health-related problems among individuals in university departments outside the classical health sciences. Although communication among individuals from diverse disciplines requires continuing nurture, even when the level of motivation is high, CAHP's productivity has demonstrated that it can be achieved and, indeed, can lead to valuable new kinds of investigation.

The Center's activities have relied on several different models of interdisciplinary cooperation. Perhaps the most obvious has been the invitation to the School of visiting professors from other institutions -- a conventional de-

vice, but one which we feel has been greatly underutilized. Another form of collaboration has been research projects jointly conducted by individuals from different disciplines who are long-term staff members of the Center. For instance, two such staff members, a physician and a public policy analyst, have worked together over a period of years to apply new methodologies to a set of questions that had not been previously addressed concerning hypertension. This collaboration resulted in the publication of the volume Hypertension: A Policy Perspective, and is continuing in a variety of derivative studies.

The Seminar Program in Health and Medicine has proved to be another very effective method of integrating the activities of individuals from a variety of backgrounds, many of whom have major commitments elsewhere. Evidence of the Seminar's productivity is given by the recent publication of a nationally noted volume -- Costs, Risks and Benefits of Surgery, edited by Bunker, Barnes, and Mosteller -- that resulted from the efforts of one of its working groups. The Center's active program of public presentations, including Public Health Rounds and the weekly informal seminars for Center staff and others, has also been helpful in encouraging interchange among members of different disciplines.

The ultimate goal of the Center is to influence health care and its delivery for the better, through what we believe to be a much-needed focus on the evaluation of health and medical practices and the application of quantitative and policy analysis to health problems. The Center's publications, consultative activities, sponsorship of seminars and meetings, and development of courses for medical students and others are all intended as steps toward this goal. Although its achievement will obviously take time, we hope that the Center's activities will eventually contribute to such improvements in health care as a reduction in unnecessary surgery, the restructuring of medical reimbursement mechanisms to create incentives for cost control, and the acceptance of new methods to improve adherence to antihypertensive therapies.

Office of Health Policy Information

The Office of Health Policy Information (OHPI) has been established at the School on an experimental basis, with the dual goals of promoting public understanding of health-related issues and of contributing to informed decision making in the public sector. Under the direction of Dr. Jay Winsten, the Office is designed to serve as a resource center and as a faculty link for journalists and legislative staffs.

Early activities of the Office focused on testing the feasibility of establishing productive relationships with legislative committees. Drawing on expertise from various sectors of the University, Dr. Winsten prepared a comprehensive assessment of a major piece of pending federal legislation dealing with reauthorization of the health manpower statutes, including a detailed critique and recommendations for strengthening the proposed legislation. A copy of Dr. Winsten's report was sent to the Senate Health Subcommittee, at their request, and many of its recommendations were adopted. The success of this effort, in terms of galvanizing the expertise within the University and providing a legislative committee with useful advice, led the Office to undertake a similar

assessment of state and federal policies concerning organization of services for the elderly. In a related effort, Dr. Winsten helped to coordinate the Panel on Long-Term Care and Aging mentioned earlier in this report.

The Office's current efforts are focusing on dissemination of information to the public through the press. The first major activity OHPI sponsored in this area was a press conference on the costs, risks, and benefits of surgery, held in Washington, D.C., in May, 1977. Participants in the conference included the senior editors of the major study on this subject (mentioned in the preceding section of this report) that grew out of research done by participants in the Seminar Program on Health and Medicine sponsored by the Center for the Analysis of Health Practices. As a result of the press conference, nationwide attention was focused on issues related to the costs and benefits of surgery, through extensive coverage in the press and on television.

As its primary mechanism for disseminating information to journalists in the future, the Office plans to prepare and distribute a monthly series of "Harvard Reports on Health Policy and Medicine." The reports will be prepared with extensive input from Harvard faculty, and will provide facts, figures, and analytic perspectives on selected current issues. The Office is also experimenting with visiting fellowships and seminars for journalists on topics in health policy and medicine. To test a prototype for the fellowship program, Mr. Victor Cohn, medical reporter for the Washington Post, began a six-week residence at the School on March 6, 1978, serving as the first Visiting Fellow in Health Policy Information.

Other activities of OHPI have included the organization of four public policy panels in September, 1976, as part of an eight-day conference on "Origins of Human Cancer" held at the Cold Spring Harbor Laboratory on Long Island. Co-sponsored by the School and the Cold Spring Harbor Laboratory, the conference was a direct outgrowth of the Meeting on the Epidemiology and Mechanisms of Chemical-Related Cancer held under this contract. It brought together applied and basic scientists for a comprehensive assessment of environmental, physiological, and genetic aspects of current cancer research. Dr. Winsten played a major role in editing the proceedings of the conference, which were published last fall.

Although the Office of Health Policy Information is still relatively experimental, we believe that its goals are sound ones, and that an effort to improve understanding of health policy issues on the part of the public, the media, and legislators forms an essential complementary approach to our other activities. We are currently seeking funding to establish OHPI on a permanent basis and to expand its activities in the future.

V. CONCLUSIONS AND FUTURE PLANS

Historically the term "public health" has been applied to a variety of somewhat heterogeneous activities, many of which have been related to problems of disease prevention from the point of view or population-based measures. These included measures like the design of sanitation systems or vaccination for infectious disease. The scholarly work necessary to support such activities was largely in the area of the natural sciences. It focused on such subjects as toxicology, epidemiology, certain branches of physiology, and the microbiology of infectious diseases. In addition, aspects of medicine and engineering were also historically part of the public health curriculum.

Today, however, the kinds of public health problems facing society are different in a number of ways. Many of the more tractable problems, those that could be dealt with by a relatively straightforward application of technical or medical knowledge, have already been solved. Those that remain could be divided into two classes: (1) problems that, while less straightforward, can be approached via the same scientific routes (e.g., environmental carcinogenesis); and (2) problems that will require a substantially different approach. Problems in the latter class are increasingly recognized as complicated and subtle, their difficulty being compounded by the rapid rate of change and growing complexity of our society. Major categories of such problems include: alteration of individual behavior and of the behavior of large and complex organizations in ways that will result in improvements in health; and allocation of limited resources and administration and organization of health care delivery in the most effective, efficient, and equitable fashion. Another significant group of problems, those that relate to health in developing countries, will require a combination of scientific and other approaches.

The new characteristics of these problems and possible approaches to them make it vital for schools of public health to reexamine their educational, research, and service programs and to reorient these programs where necessary in response to societal needs. The support provided by Contract NO1-AH-34018 has been invaluable in permitting us to undertake both these tasks. By means of the series of panels held under the contract, we gained a picture of educational and research needs in various public health areas and an assessment of how well our programs were helping to meet those needs. Our development of new programs in one highly significant area -- health policy and management -- has deepened our understanding of those needs and of feasible ways to meet them, and has given us a set of models to use in further revising the programs of the School.

As a result of our activities under the contract, we have come to a number of conclusions concerning current and future public health problems and ways in which schools of public health can contribute to their solution. Some of these conclusions are summarized in the following paragraphs.

1. Need for skills in policy analysis and management. Professionals hoping to make progress toward the solution of public health problems now and in the future must be able not only to apply relevant technical, scientific, or medical knowledge but also to plan and develop alternative policies, make wise choices among them, and carry out the policies selected -- all in an environment in which resources are limited and many large and complex organizations with different

and conflicting goals are involved in any chosen course of action. Thus, one of our greatest needs is for individuals who possess both policy analytic and managerial skills and knowledge about one or more substantive public health areas.

We believe that schools of public health, particularly those that can draw on the resources of a large university, are uniquely equipped to train such individuals. With funds from this contract, we developed a major new degree program, the Graduate Program in Health Policy and Management, to provide such training in the area of health services, and are in the process of extending it into the areas of environmental health, nutrition, population, and international health, and possibly developing a track for medical students as well. Our success in attracting well-qualified students to the program and in placing its graduates in desirable positions attests to the interest in this kind of training and its relevance to societal needs.

2. Need for interdisciplinary cooperation. The health problems facing us today are extremely complex; their solution cannot be found in a purely medical approach, but must be sought in the application of skills and knowledge from many disciplines. Thus, there is a need to train public health professionals in disciplines that are relevant to, even though not traditionally associated with, public health; to train representatives of such non-traditional disciplines in aspects of public health; to encourage communication and collaboration among members of different disciplines; and to ensure that the various resources available within our universities are utilized fully. While productive interdisciplinary collaboration is undoubtedly difficult, we believe that it can be achieved, and that schools of public health are in a good position to achieve it, by virtue of their problem-oriented approach.

Our activities under the contract and related efforts have enabled us to explore many mechanisms for fostering interdisciplinary cooperation and interaction with other parts of the University. For instance, the Graduate and Executive Programs in Health Policy and Management have both relied heavily on collaboration with other Harvard faculties, through such mechanisms as cross-registration and joint appointments. Within the School itself, the Center for the Analysis of Health Practices has explored a variety of methods to encourage interdisciplinary research, and we have experimented, in the Department of Health Services, with a matrix organization designed to permit both disciplinary and problem-oriented approaches. In addition, the contract has supported a program of joint and visiting professorships, under which faculty members from other parts of Harvard and other institutions have come to the School for limited periods of time. In all these activities, we have found much interest in health problems among representatives of disciplines not traditionally associated with health. As a result of our efforts, interaction among members of different disciplines has increased significantly at the School, and has been productive in teaching, research, and service programs.

3. Need for increased involvement with the community. Our experiences under the contract have led us to believe that schools of public health need to strengthen their involvement with operating health care agencies and institutions in the community, for several reasons: (1) to ensure that their programs take into account the needs and constraints of the "real world"; (2) to give students the chance to practice applying their new skills and knowledge to real problems;

and (3) to gain opportunities to develop demonstration projects that may prompt desirable changes in the health care system. Many of the new activities we have undertaken have been directed toward one or more of these goals. Examples include the case study approach, field work components, and clinical faculty of the HPM program; the technical assistance projects of the Office of Extramural Health Programs; the Collaborative Health Improvement Programs of the Department of Health Services; and the continuing education of practicing executives conducted by EPHPM. Most of these efforts to involve the School more closely with the "real world" have provided numerous benefits not only to the School and its faculty and students, but to the practicing health care professionals as well.

4. Need for midcareer education and education of medical students and residents. The rapid rate at which the health care system is changing makes it especially important for practicing professionals to keep abreast of new knowledge. In addition, such professionals are in an advantageous position for effecting change and can provide a useful link to operating agencies and institutions. For all these reasons, we believe that schools of public health have a responsibility to offer continuing education programs as well as programs for students at the beginning of their careers. The Executive Programs in Health Policy and Management, our major new effort in this area, has enjoyed a high degree of success in its first few years of operation, and is becoming widely known. Judging from our experience with EPHPM, the number of midcareer professionals who can profit from such continuing education is high, but their ability to attend may be limited by the budgetary constraints of state and local governments. Before other schools of public health attempt to develop similar midcareer programs, the real market potential should be examined, or federal funding for such education should be made available.

We have also begun to provide increased training in aspects of public health to medical students and residents, in the belief that it is essential that all physicians understand the value of a preventive, population-oriented approach to health problems. Individual courses for medical students and residents have been developed on an ad hoc basis; in the coming months we anticipate approaching this task in a more comprehensive and formal way through activities of the new joint Division of Preventive and Social Medicine and through the development of a track for medical students within the Health Policy and Management Program.

5. Need for focus on problems of resource allocation and technology assessment. As the Panel on Health Services predicted, the health care system of the future is likely to be characterized by closed-end funding, with health itself only one of a number of competing social goals. This situation makes it essential to ensure that resources are deployed in the most efficient, cost-effective, and equitable fashion. In addition, it is becoming increasingly important to educate the public, the media, and legislators concerning the limitations of a purely medical approach to health problems and the need for well-considered policy decisions about health-related issues. We have established the Center for the Analysis of Health Practices and the Office of Health Policy Information to develop ways to deal with these and similar problems.

6. Need for better integration of applied and basic research. Several of the panels held under the contract stressed the importance of maintaining a balance between basic and applied research, and of finding ways to interest

individuals trained in classic academic disciplines in applied areas. While none of the activities described in this report have been directed explicitly at this need, many have encouraged interaction between basic and applied scientists by virtue of their emphasis on interdisciplinary cooperation. To be discussed somewhat later in this section is a major new program, Interdisciplinary Programs in Health, that has as one of its primary goals the integration of research in basic and applied areas.

By and large, we believe that the new programs developed under this contract and related activities have been successful, whether judged on the basis of subjective impressions or by such objective criteria as the high application-to-admission ratio of the HPM program, the productivity of the research conducted by CAHP, and the growing reputation of the Executive Programs. Furthermore, the establishment of these programs represents significant progress toward a reorientation of the School's activities. That the School has changed substantially during the past five years is evidenced by the increased emphasis on policy and management issues and the major new degree and midcareer programs in this area; the growth of interdisciplinary collaboration and interaction with other parts of the University and the community; and the new efforts focusing on the evaluation of health practices and education of the public, the media, and legislators. We expect that the new programs we have developed will provide a solid base for the continuing review and revision of other activities in the future.

One of the goals of this contract has been the development of programs that might provoke consideration of new directions in other institutions also, not just in our own School. While recognizing that each educational institution must assess its own strengths and weaknesses and determine its own goals, we believe that many elements of the programs we have developed merit replication and could easily be adapted to other situations. These elements range from something as broad as an emphasis on field training or midcareer education to something as specific as a set of case studies related to health economics. Interest in our experiences has already been expressed by other schools as the result of informal dissemination of information concerning the new programs we have established. We intend to promote such interest in the future by continuing to make known the results of our efforts, through both formal and informal mechanisms.

For those institutions that might be interested in repeating some of our experiments or trying new ones, some general comments might be useful. First, it is vital to enlist faculty support for the development of new programs, and to keep lines of communication open. Even so, some conflict and opposition seem inevitable -- although this can be expected to lessen with time. Two other obvious requirements for the development of new programs are identification of funding and of a widely respected person of intellectual strength to lead the effort. Finally, consideration must be given at every step to the relationship between new and existing programs, and necessary accommodations made.

Along with further dissemination of the results of our activities, our plans for the future include continued evaluation of the new programs we have developed. We anticipate that all the major efforts described here will continue in the future; in fact, most will not only be continued but will be strengthened and expanded. We also plan to pursue further our consideration of the place of these new programs within the total range of activities at the School.

During the past several years, we have concentrated heavily on building up our capabilities -- both educational and research -- in areas concerned with the structure and function of the health care system in the United States. This report has reflected our emphasis on health policy and management, in particular, as an aspect of public health we consider especially important at the present time. It should be recognized, however, that this emphasis is by no means intended to imply that other public health areas are not equally significant, or that our efforts under the contract have been confined to this one area. Along with the continuation and extension of activities we have already begun, our plans for the future include giving greatly increased attention to the revision of existing programs and development of new ones in a number of other public health areas, such as behavioral sciences, nutrition, international health, quantitative methods, and environmental and occupational health.

Considerable progress has already been made in the last of these areas. As described earlier, Executive Programs has developed several continuing education programs related to environmental and occupational health, and a new research program dealing with environmental mutagenesis has been established. Two other important new projects are currently in the early implementation stage. The first is a major expansion of the School's educational programs in occupational safety and health, made possible by a grant from the National Institute of Occupational Safety and Health. The five-year grant will establish a regional center in this area at the School, under the direction of Dr. John Peters. Support will be provided not only for degree programs but also for continuing education courses and for the introduction of a component of occupational health into existing courses to train health professionals. Short courses for engineers, nurses, medical students, and others who may serve in the occupational setting are planned. The program in occupational medicine will also be strengthened, so that it can attract more people to this underserved area. Training in the programs will be through a team approach, in which students will investigate such work-related problems as respiratory and cardiovascular diseases, cancer, accidents, and mental stress. Students will also learn to recognize the legal, economic, social, and political forces which often hamper solutions to occupational health and safety problems.

A second major new program relevant to environmental health is Interdisciplinary Programs in Health (IPH), which will begin its first year of operation in the fall of 1978, under the direction of Dr. Donald F. Hornig. Although IPH's initial activities will focus on specific research areas related to environmental health, its overall objectives are broad ones: to enlist scholars from the natural and social sciences and from quantitative analytic areas in finding new ways to deal with today's complex health problems and to attract into and train for health careers both young and midcareer people with strong backgrounds in a natural or social science. IPH will draw on the resources of the entire University, including members of the Faculties of Arts and Sciences, Government, Law, Business, and Medicine, as well as Public Health. Opportunities will be provided for two groups of people: (1) senior scientists and scholars who have made significant contributions in a discipline and now wish to prepare themselves to apply their discipline to health-related problems; and (2) promising graduates of advanced degree programs in the natural or social sciences seeking preparation for careers in which their talents can be applied to health-related problems. The Programs will include individual and group research projects and seminars that will

explore particular problems and develop papers and monographs. It is expected that participants will leave IPH prepared to work on health problems in governmental settings, in industry, and in research institutions.

At the start of this report, we referred to the paradox presented by the widespread search for missions on the part of schools of public health at a time when so many serious and complex health problems are facing our society. With the help of funds provided by this contract, we believe we have made considerable progress toward remedying this situation, by identifying current and future needs in a variety of public health areas and taking major steps toward a reorientation of the School's activities so that they will be more responsive to these needs, through the integration of new approaches and disciplines with those preexisting in the School. Although this process is not an easy one, it has helped us to develop a number of strong new programs. In the future we intend to use those programs as a base for continuing the reorientation of our activities, and we hope that they will provoke a consideration of new directions in other institutions also.

On the basis of our experiences during the past five years, we have concluded that, far from being irrelevant to societal needs, a school of public health can offer precisely the combination of resources needed to approach many of the difficult and complicated health problems confronting us. It can bring together the relevant social and natural sciences, policy and management skills, and quantitative techniques and direct them toward approaches to "real world" problems. The development of programs that focus these resources on the improvement of health in this country and abroad might well form the present and future mission of schools of public health.

Note: The number of people who have contributed to this effort, within Harvard University, within the Department of Health, Education, and Welfare, and in outside health agencies and organizations, are too numerous to recount, but we remain greatly indebted to all of them.

Our efforts to report on our progress and to develop a coherent description of the many events that have taken place have resulted from the hard work and perceptiveness of Ms. Cordelia Swain.

APPENDICES

APPENDIX A

Scope of Work and Modifications

Contract N01-AH-34018

Article I: Scope of Work

The contractor shall furnish the personnel, materials, equipment, and facilities necessary to:

A. Study, evaluate and, to the extent feasible within the period of performance of this contract, modify and augment the educational program of the Harvard School of Public Health, including the School's related professional training, specialized consultative services, technical assistance, and health services research activities. The objectives of this project shall be the design and implementation of new academic programs utilizing existing teaching resources in the School, elsewhere on the University campus, and in the community, and the creation of new academic programs with which to train public health professionals who are prepared to meet current and emerging public health problems, including those created by changes in health care delivery systems.

B. In pursuance of the objective stated in paragraph A, above, the contractor shall exert its best efforts to:

1. Establish an Office of Program Planning within the Harvard School of Public Health which shall be responsible for administering the activities set forth in the remainder of this paragraph and in paragraph C. below.

2. Identify major issues in public health as they affect current and future education and training needs for public health manpower. This identification process shall be undertaken in consideration that inability to describe with certainty the several systems of health care delivery likely to emerge and other patterns of change that will occur in public health policy makes it necessary to develop student selection and educational programs which are flexible and which will provide products that will meet a variety of needs.

3. Convene at least five study panels of approximately 10 to 15 members each, designated in consultation with the project officer, over a two-year period, to identify the kinds of public health manpower that will be required by society and to outline the current and future education and training these professionals will need to meet evolving public health needs. The areas of public health which will be explored shall include, but not be limited to, the items listed below.

a. Systems for the delivery of health and medical care at every economic level and in all types of geographical areas.

b. Behavioral and social problems as they relate to community and environmental health, including:

(1) Population control

(2) Risk factors for physical and mental illness

c. Environmental health services and issues of environmental control and abuse, including occupational health.

d. Communicable disease control.

e. International health.

The priority with which these are studied shall be determined by the Office of Program Planning in consultation with the project officer.

In their deliberations, the panels shall consider modifications in the roles and functions of existing public health disciplines including the following:

a. Health services administration, including health policy analysis and health facilities management.

b. Environmental health services.

c. Health statistics.

d. Epidemiology.

e. Community health education.

f. Public health nursing.

g. Public health nutrition.

4. Have the panels identify the anticipated directions that will be taken in health services delivery systems and in other aspects of health policy over the next decade to meet changing problems of the public health and in the context of these:

a. State the premises under which these predictions are made, specifically including the health services delivery systems framework within which new types of public health personnel might be expected to operate;

b. Define requirements for new types of public health personnel and their relationship to other professional personnel operating within the same framework;

c. Describe the functions of such new kinds of personnel, their expected job tasks, and the types and levels of educational programs required for their preparation;

d. Describe new types of support personnel for whom special training and services will be required.

5. Describe the general characteristics of the educational experience, including required field training, that will maximize the professional competence of personnel in the disciplines identified in paragraphs B.3. and B.4. above, as related to existing, emerging, and anticipated health services delivery systems.

   a. Requirements for education in a variety of disciplines such as business management, public policy, law and others, as well as more traditional public health courses, shall be included in this description. Faculty from such disciplines shall be enlisted in planning of curricula and in the educational programs themselves.

   b. The design of field training portions of new and modified curricula will give attention to new, as well as traditional, types of health agencies, institutions, and organizations, both public and private, which can provide appropriate learning experiences for students. Curriculum design shall include affiliation agreements between the academic institution and the health agency which provides the site for field training.

6. Engage the attention and professional assistance of related professional schools and programs of the University, including but not limited to the fields of medicine, law, public policy, business administration, and education to design the public health professions educational program so that it draws upon and is interrelated with the range of educational resources--faculty, supportive staff, facilities, equipment, consortia, and affiliation agreements--available to the University in these several fields.

   a. The contractor shall prepare a description of plans and agreements for intra-University cooperation and coordination in the provision of public health training, including but not limited to considerations of joint faculty appointments, screening and selection of students, allocation of budgeted funds, core curriculum, and articulation within and between curricula of the several professional schools within the University.

7. Develop, describe, and experiment with key modifications in the curricula for training in these disciplines as indicated by the new roles and functions identified by the respective study panels.

C. In connection with and as part of the work and services to be performed hereunder, the contractor shall furnish to the Project Officer three copies of the following:

   1. Accounts of panel meetings, panel membership lists, written panel reports and recommendations.

   2. Progress reports at three-month intervals of the contract period, providing a description of work accomplished during the three-

month period for which the report is made, important problems encountered in performance of the work, solutions or proposed solutions to these problems, and the schedule of work planned for the succeeding three-month period. In addition, each of these progress reports shall include a description of any continuing participation of the study panels and any changes in membership or programmatic orientation of the panels.

3. An annual report at the end of each year of the contract period, summarizing the total work and accomplishments to date and including the final version of the changes to be made in the academic program and the schedule for program implementation.

4. A final report on the background, purpose, methodology, and accomplishments of work under this project; details relating to the implementation of the newly implemented portions of the academic program, with emphasis on the type of faculty interactions and realignments both with the University and with educational resources outside the University; recommendations for continuation and sources of support for the new academic program; an assessment of the problems encountered in a major reorientation of the educational program in a school of public health; and recommendations for the desirability of, and methodology for undertaking similar efforts at other schools of public health.

From Modification 4 to Contract NO1-AH-34018 (Fffective Date 6/30/74)

3. ARTICLE I entitled "Scope of Work", is hereby amended as to the following particulars:

   a. Paragraph C is hereby deleted in its entirety.

   b. The following new paragraphs C and D are hereby incorporated into and made part of the Scope of Work:

C. The Contractor shall furnish the necessary personnel, materials, equipment and facilities to study, plan and implement curriculum changes in the educational program of the Harvard School of Public Health as recommended by the respective study panels in the areas of health policy and management, maternal and child health, mental health, and health in developing countries. The Contractor shall study the relation of the Health Policy and Management program to the MPH program and shall establish joint and visiting professorships in the new programs implemented under this contract with faculties in other schools of the University. In pursuance of these objectives, the Contractor shall specifically:

1. Develop a program of summer work experience for students in the Health Policy and Management program utilizing the facilities of State or local health departments and health and hospital administrations; health maintenance organizations; and Federal health agencies.

2. Develop a focal point or office for extramural programs within the School of Public Health to coordinate the teaching programs implemented under this contract with outside agencies and institutions which serve as a field locus for the training and which represents the types of institutions who will employ the trainees.

3. Conduct a study of the relationship of the Health Policy and Management Curriculum to the MPH curriculum. The study will include an assessment of the orientation of the faculties of the two curriculums with particular reference to policy and management; the curriculum selections of students and their career plans; the experience of alumni in comparing their career experience to their educational preparation; and the views of potential employers of graduates of the School concerning present and future management needs.

4. Revise the curriculum in Maternal and Child Health and begin implementing aspects of the new program as recommended by the MCH Expert Panel. The following areas will be considered: a) mental and emotional health and delinquency; b) identification of genetic and other risk determinants in children and mothers; c) human genetics; environmental aspects of child health; and d) public policy issues in maternal and child health.

5. Establish a focal point for planning changes in the mental health curriculum. This will include the following areas of consideration:

a) The need for a University-wide endeavor in the behavioral sciences; b) The need for an epidemiological approach to the measurement of productivity in mental health care and in the evaluation of human services; c) The need for training in research for psychiatrists, especially the use of epidemiological methods; and d) The need for policy analysis to implement epidemiological studies.

6. Develop Joint and Visiting Professorships between the faculty of the School of Public Health and the faculties of other Schools in areas to include public policy, economics, management, engineering, law and city planning.

7. Establish a focus to plan and implement new training programs for careers in health services in developing countries. The plan will bring together appropriate elements in the health policy and management curriculum with the economics department of the faculty of Arts and Sciences and the School of Education.

D. Articles or Services to be Furnished and Delivery Time

ITEM	DESCRIPTION	QUANTITY	DELIVERY TIME
1	Progress reports providing a description of work accomplished during the six-month period for which the report is made, important problems encountered in performance of the work, solution or proposed solutions to these problems and the schedule of work planned for the succeeding six-month period.	3 copies	Every 6 months with the first due December 31, 1974
2	An annual report summarizing the total work and accomplishments to date.	3 copies	Every 12 months from date of award.
3	Final report on the accomplishments of work under this project; details relating to the implementation of the new academic programs emphasizing the types of faculty interactions and realignments both within the University and with educational resources outside the University; the final plan for continuation and funding of the new academic programs and recommendations for the desirability of and methodology for undertaking similar efforts at other schools of public health.	5 copies	Upon completion of the contract

APPENDIX B

Members of the Office of Program Planning

Members of the Office of Program Planning*

Howard H. Hiatt
Dean
Harvard School of Public Health

Herbert Sherman
Assistant to the Dean
Director, Office of Program Planning

Natalie Bernstein
Administrator
Office of Program Planning

Donald M. Berwick
Assistant to the Director, Center for
the Analysis of Health Practices
Instructor in Maternal and Child Health

Joseph D. Brain
Acting Associate Dean for Academic Affairs
Associate Professor of Physiology

Richard J. Greene
Consultant to the Dean
Director, Quality Assurance Study

Robert J. Haggerty
Roger I. Lee Professor of Public Health (Health
Services and Pediatrics)
Head, Department of Health Services
Acting Head, Department of Behavioral Sciences

Stephen C. Joseph
Director
Office of International Health Programs

Emily Morrison
Assistant to the Dean

H. Richard Nesson
Director
Office of Extramural Health Programs

Barney Reiffen
Assistant to the Dean

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*Some of the individuals listed were members of OPP for only part of the duration of the contract.

James L. Whittenberger
Associate Dean
Professor and Head, Department of Physiology

Jay A. Winsten
Acting Director
Office of Health Policy Information

APPENDIX C

Typical Letter of Invitation to Panels

Charge to Panels

Typical Letter of Invitation to Panels

Dear _____:

As part of our consideration of present and future programs of the Harvard School of Public Health, we have been inviting colleagues in other parts of the University and interested experts from outside to examine with us some of the principal health problems confronting society. In each area a panel has been asked to help us identify those manpower needs and research and development challenges that seem most urgent. (A copy of the charge to panels is enclosed.) With this information we are attempting to determine the most useful roles the School can play in the future, particularly in association with other faculties of the University and with outside agencies.

We wish now to consider the scope of our future program in (subject area). It would be of enormous help to me and to our faculty if we could enlist you to work briefly with us in this effort. Our meeting will be held on (date and time), at the School. Please let me know if your schedule will permit you to attend.

With best wishes,

Sincerely yours,

Howard H. Hiatt
Dean

Charge to Panels

We at the Harvard School of Public Health are presently engaged in an effort to assess the current activities of the School and to plan its role in addressing the public health problems that will face society in the decade ahead. One mechanism through which we hope to accomplish this goal is the convening of a series of panels, each of which is to be concerned with a designated health area. During the course of its discussion, it is hoped that each panel will identify for the area in question the manpower and research and development challenges that seem most urgent and, in light of these challenges, will help develop a recommended plan of action that might be used in setting guidelines for the future. Suggestions for implementing and subsequently evaluating recommended programs should also be offered.

In order to carry out its charge, each panel might focus on the following tasks:

1. Review the current status of the designated field, identify the needs likely to exist in the decade ahead, and describe the kinds of services that will be required to meet these needs.

2. Describe the kinds of manpower required to provide these services at all levels of education and training--graduate, undergraduate and non-professional. Outline the educational requirements for each of these categories, including requirements for continuing education. Suggest those categories of professionals to be educated exclusively at the School and those to be educated in collaboration with other Harvard faculties. Describe the responsibilities of the School, if any, in situations where society must have education carried out, but where the School is not directly involved (e.g., grade school education in public health, the training of para-professionals).

3. Describe research areas in the designated field in which the School might be involved alone, or collaboratively with others within or outside the University.

4. Suggest those settings that might serve as laboratories for research and education. If such facilities are not now affiliated with the School, suggest how linkages might be effected.

5. Suggest new institutional mechanisms, involving the School or not, that may facilitate the achievement of the objectives set forth.

6. Recommend individuals who could assume leadership roles in translating the findings and recommendations of the panels into action.

Prior to its initial meeting, each panel will be provided a compendium of teaching and research activities underway throughout the University in its designated area. This will be prepared by the staff of the School's Office of Program Planning. In addition, staff members of this Office will be available to assist in the deliberations of each panel. The panel discussion will be taped and an edited transcript of the tape prepared by staff of the Office of Program Planning. This transcript will serve as a final report on the panel's deliberations and will be circulated to panel participants, members of the faculty of the School, and other interested persons.

APPENDIX D

Participants in Panel on Health Services

Panel on Health Services

September 27 and October 24-25, 1972

Members

William C. Capron
Associate Dean
Lecturer on Political Economy
John Fitzgerald Kennedy School of Government
Harvard University

Paul M. Densen
Professor of Community Health
Director of the Center for Community
Health and Medical Care
Harvard University

Peter Doeringer
Associate Professor of Economics
John Fitzgerald Kennedy School of Government
Harvard University

Paul Ellwood, Jr.
Executive Director
American Rehabilitation Foundation

Kenneth M. Endicott
Director
Bureau of Health Manpower Education
Department of Health, Education, and Welfare
National Institutes of Health

Alain Enthoven
President
Litton Medical Products, Inc.

Martin Feldstein
Professor of Economics
Faculty of Public Administration,
Institute of Politics
Harvard University

Peter C. Goldmark
Secretary of Human Services
Commonwealth of Massachusetts

Howard H. Hiatt
Dean
Harvard School of Public Health

Alexander Leaf
Jackson Professor of Clinical Medicine
Harvard Medical School
Chief of Medical Services
Massachusetts General Hospital

H. Richard Nesson
Medical Director
Harvard Community Health Plan

Mitchell T. Rabkin
Associate Professor of Medicine
Harvard Medical School
General Director, Beth Israel Hospital

Julius B. Richmond
Director, Judge Baker Guidance Center
Professor of Child Psychology and Human Development
Chairman, Department of Preventive and Social Medicine
Harvard Medical School

John R. Russell
Associate Professor of Business Administration
Graduate School of Business Administration
Harvard University

Ernest W. Saward
Professor of Social Medicine and
Associate Dean for Extramural Affairs
University of Rochester School of Medicine and Dentistry

Lester Thurow
Professor of Economics and Management
Alfred P. Sloan School of Management
Massachusetts Institute of Technology

James Vorenberg
Professor of Law
Harvard Law School

Jeffrey Weiss
Deputy Administrator for Program Analysis, Planning,
and Budgeting
Health Services Administration
City of New York

Kerr L. White
Professor, Medical Care and Hospitals
The School of Hygiene
Johns Hopkins University

Vernon E. Wilson
Administrator
Health Services and Mental Health Administration

Participants from Harvard School of Public Health

James L. Whittenberger
Associate Dean

Alexander H. Leighton
Chairman, Department of Behavioral Sciences

William M. Schmidt
Chairman, Department of Maternal and Child Health

Alonzo S. Yerby
Chairman, Department of Health Services Administration

Natalie Bernstein
Administrator, Office for Program Planning

Emily Morrison
Assistant to the Dean

Barney Reiffen
Assistant to the Dean

Herbert Sherman
Assistant to the Dean

APPENDIX E

Graduate Program in Health Policy and Management

Course Requirements - 1977-78 Academic Year

Graduate Program in Health Policy and Management

Course Requirements - 1977-1978 Academic Year

COURSE	TITLE	INSTRUCTOR
Required in the First Year		
ID 214a,b	Accelerated Introduction to Biostatistics	Thibodeau
or		
acceptable alternative with permission of instructor		
ID 214c,d	Quantitative Analysis of Health Problems	Thompson, Sahney
HSA 208a,b	Economic Analysis	Hemenway
HSA 208c	Health Economics	Taylor
EPI 201a	Epidemiology	Monson
HSA 309b,c	Health Care Issues and Institutions	Fineberg, Haggerty Rosenkrantz, White
HSA 311d*	Seminar for Economics in Health Policy Analysis	Taylor
HSA 220d*	Quality Assurance	Palmer
HSA 210d*	The HMO-Exploring an Alternative	Nesson
HSA 217d*	Planning Social Change	Feldman
HSA 328d*	Reimbursement Systems	Young
Required in the Second Year		
HSA 315a,b,c,d	Applied Research Seminar	Dumbaugh
Required in the First or Second Year		
HSA 244a,b	Political Analysis in Health Care	Fineberg
	or	
NUT 203c,d	Nutrition Policy Formation	Austin
	and	
ID 216c,d	Social Origins of Health Care in the United States	Rosenkrantz
	or	
HSA 306c,d	Community Health Data: Collection and Analysis	Gortmaker

*First year students must take two of the five listed modules in the "d" period. In addition, an eight-week work experience is required in the summer between years one and two.

COURSE	TITLE	INSTRUCTOR
Partial Listing of Electives		
HSA 327a,b	Labor Relations	Livernash
HSA 324c	Problems in Public Management	Chase
HSA 325c	Contracts and Grantsmanship	Dumbaugh
HSA 326c	Strategic Issues in Personnel Management	Livernash
HSA 209c,d	Economics of Health Planning	Hsiao
HSA 312c,d	Introduction to Control and Finance	Atamian, Young
HSA 313d	Health Care Operations Management	Sahney

APPENDIX F

Graduate Program in Health Policy and Management

Preceptors for the 1977 Summer Internship Program

Graduate Program in Health Policy and Management

Preceptors for the 1977 Summer Internship Program

Dr. Richard Ryan
Hospital Director
West Roxbury Veterans Administration Hospital
West Roxbury MA 02132

Stanley Burchfield
Director of Professional Services
Boston Hospital for Women
Boston MA 02115

Dr. Richard P. DeFilipe
Chairman
Cambridge Health Policy Board
Senior Staff Consultant
Arthur D. Little Co.
Cambridge MA

Mr. Jeff Caskey
Executive Director
Southwest Alabama Health Planning Council
Mobile AL

Carl N. Wathne
Executive Director
Lahey Clinic Foundation
Boston MA

Steve Lorch
Director
New England Resource Center for
Protective Services
Judge Baker Guidance Center
Boston MA 02115

Anne Keith
Director of Medical Unit
Brookside Park Family Life Center
Jamaica Plain MA 02130

Lawrence Hill
Executive Director
New England Medical Center Hospital
Boston MA 02111

Andrew Nighswander
Commissioner
State Rate Setting Commission
Boston MA

Dr. Robert Hamlin
Chairman
Macro Systems
Silver Spring MD

Dr. Harvey Fineberg
Director
Graduate Program in Health Policy and Management
Harvard School of Public Health

Dr. Francis Communale
Acting Commissioner of Public Health
c/o Department of Anesthesiology
Cambridge City Hospital
Cambridge MA

Mr. Leonard Muller
Executive Director
Westlake Hospital
Melrose Park IL

John C. Custer
Kaiser Foundation Health Plan
Oakland CA

Mark Thompson
Assistant Professor
Department of Health Services
Harvard School of Public Health

Drs. Alan Gittelsohn and
Richard Yaffe
Johns Hopkins University
Baltimore MD

Dr. James Liljestrand
Medical Director
Braintree Hospital
Braintree MA 02184

Dr. Joe Hafey
Western Center for Health Planning
San Francisco CA 94103

Elizabeth Sands
Mt. Auburn Hospital
Cambridge MA

Dr. Heather Day
Director
Neighborhood Health Centers
c/o Cambridge City Hospital
Cambridge MA

Anne Keith
Director of Medical Unit
Brookside Park Family Life Center
Jamaica Plain MA 02130

Jack Kasten
Vice President
Arthur D. Little, Inc.
Acorn Park
Cambridge MA

Dr. William Goldman
Community Mental Health Services
San Francisco CA 94102

Sheldon Bycoff
Massachusetts Mental Health Center
Boston MA 02115

APPENDIX G

Graduate Program in Health Policy and Management

Preceptors and Student Projects for the
1977-78 Applied Research Seminar

Graduate Program in Health Policy and Management

Preceptors and Student Projects for the
1977-78 Applied Research Seminar

PRECEPTOR	STUDENT PROJECT(S)
Sen. Robert McCarthy Democrat, East Bridgewater	Long-Term Care Facilities: Legislation to Alter Rate-Setting Mechanism
Mr. Stanley G. Burchfield Boston Hospital for Women	Development of a Home Care Program at the Boston Hospital for Women
Mrs. Janet Packard Family Health Services	Nutrition Survey and Audit of WIC (Supplemental Food Program)
Mr. Jeff Caskey Southwest Alabama Health Planning Council	Chapter III of the Health Systems Plan of the S.W. Alabama Health Planning Council Ideas and Comments Toward Development of Standards and Criteria for Radiation Therapy Services
Mr. Carl N. Wathne Lahey Clinic Foundation	The Reorganization of Administrative and Support Systems of the Lahey Clinic Foundation Primary Care and Radiotherapy Center
Mr. Steve Lorch New England Resource Center for Protective Services	Development of a Systems Model to Analyze District Offices for Social Services
Ms. Anne Keith Brookside Park Family Life Center	Strategies for Preventive Care: The Role of the Neighborhood Health Center
Mr. Stephen M. Wiener State Rate-Setting Commission	Hospital Reimbursement in the State of Massachusetts
Dr. Mitchell Rabkin Beth Israel Hospital	Organizational Study and Recommendations for Medical Practice Plans at Beth Israel
Dr. Marc Roberts Executive Programs in Health Policy and Management Harvard School of Public Health	The Effect of Regulatory Programs and Kidney Dialysis Services
Dr. Leon White CHIP Program Harvard School of Public Health	Development and Use of Disease Registry, in General, and a Heart Disease Registry, in Particular

PRECEPTOR	STUDENT PROJECT(S)
Ms. Rita Berkson Roxbury Dental and Medical Group	Feasibility Study for an Extended Care Facility
Ms. Carolyn Arnold and Mr. Shep N. Cohen Brookline Health Department	Nutrition Education Program for the Elderly at the Brookline Health Department
Dr. Don Shepard Office of State Health Planning Department of Public Health	Evaluation of the Potential Impact of Closing Hospital Beds on Utilization and Cost of Hospital Care in Massachusetts (2 students)
Dr. Mark Thompson Center for the Analysis of Health Practices Harvard School of Public Health	A Model to Determine the Cost of Stroke, Its Prevention and Treatment
Dr. Richard Greene Codman Research Group, Inc.	Evaluation of Health Care Regulations in New England Survey of Health Care Needs in the Fenway Community Health Care Area
Dr. Kenneth Slater Danvers State Hospital	Deinstitutionalization of Mental Patients
Mrs. Jelia Witschi Nutrition Department Harvard School of Public Health	The Market for Natural Food Products
Ms. Elizabeth Sands Mt. Auburn Hospital	The Ambulatory Care Program at the Mt. Auburn Hospital
---------- Boston Hospital for Women	The Cost-Effectiveness and Reliability of Commercial vs. In-House Hospital Laboratory Tests
Mr. Jack Kasten Arthur D. Little, Inc.	Technical Assistance Documents to H.S.A.'a: Coronary Care and Intensive Care Units
Mr. Sheldon Bycoff Massachusetts Mental Health Center	Policy Development for a Psychiatric Drug Treatment Program
Mr. Sheldon Bycoff Massachusetts Mental Health Center	Series of Reports on Management Issues (e.g., Support Services to a Mental Health Center)

APPENDIX H

Graduate Program in Health Policy and Management

Job Placements of the Class of 1977

Graduate Program in Health Policy and Management

Job Placements of the Class of 1977

Director of Finance and Development
Roxbury Dental and Medical Group

Coordinator, Health Education Program
Newton Public Schools

Director, Brooks Hospital Division
Lahey Clinic Foundation

Assistant Analyst, Congressional Budget Office
Human Resources and Community Development Division
United States Congress

Independent Health Care Consulting*

Stoneybrook Medical School
Candidate for M.D. Degree

Boston College Law School
Candidate for J.D. Degree

Community Liaison Director
Central Ohio River Valley HSA
Cincinnati OH

Project 2000
Harvard School of Public Health

Assistant to the Director
Community Arthritis Program
Robert Breck Brigham Hospital

Coordinator, North Benett Street Industrial School
Boston MA

Director, W.I.C. Program
Brookside Park Family Life Center

Nutrition Supervisor
Nutrition Surveillance Program-Sub-Sahara Africa
Catholic Relief Organization

Management Information Specialist
New England Resource Center

University of Wisconsin Law School
Candidate for J.D. Degree

*Three students

Doctoral Candidate
Department of Health Services
Harvard School of Public Health